### DOCKET SECTION

# OFFICIAL TRANSCRIPT OF PROCEEDINGS BEFORE THE POSTAL RATE COMMISSION

In the Matter of:

POSTAL RATE AND FEE CHANGES

Docket NO.: R2006

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#### POSTAL RATE COMMISSION

In the Matter of:

)

Docket No.: R2006-1

POSTAL RATE AND FEE CHANGES

)

Suite 200
Postal Rate Commission
901 New York Avenue, N.W.
Washington, D.C.

Volume 23 Friday, October 27, 2006

The above-entitled matter came on for hearing pursuant to notice, at 9:35 a.m.

#### BEFORE:

HON. GEORGE A. OMAS, CHAIRMAN HON. DAWN A. TISDALE, VICE-CHAIRMAN HON. RUTH Y. GOLDWAY, COMMISSIONER HON. TONY HAMMOND, COMMISSIONER HON. MARK ACTON, COMMISSIONER

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WITNESSES APPEARING:

DOUGLAS F. CARLSON (Did Not Appear)
ROBERT PAUL (Did Not Appear)
MARK J. ROBERTS
KEVIN NEELS
JOHN HALDI

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1	<u>PRQCEEDINGS</u>
2	(9:35 a.m.)
3	CHAIRMAN OMAS: Good morning. Today we
4	continue hearings to receive the direct case of
5	participants other than the Postal Service in Docket
6	No. R2006-1 considering the Postal Service's request
7	for rate and fee changes.
8	Before we begin today, does anyone have any
9	procedural matters to discuss at this point?
10	MS, DREIFUSS: Mr. Chairman? I'm Shelley
11	Dreifuss for OCA.
12	Mr. Sharfman has asked me to handle some of
13	the administrative tasks in the hearing room for
14	Intervenors who are not otherwise represented, and
15	that happens this morning with Mr. Carlson's
16	testimony. I don't know if you're up to that yet.
17	CHAIRMAN OMAS: I'll get to that.
18	MS, DREIFUSS: Okay. Very good. Thank you.
19	CHAIRMAN OMAS: Five witnesses are scheduled
20	to appear today. They are Witnesses Carlson, Paul,
21	Roberts, Neels and Haldi.
22	Ms. Dreifuss, would you please assist us to
23	receive a corrected version of Mr. Carlson's testimony
24	into evidence?
25	MS. DREIFUSS: Yes, sir. I've got two
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1	copies of the corrected testimony of Douglas Carlson.
2	It's entitled Direct Testimony of Douglas F. Carlson,
3	DFC-T-1, Final Version, dated October 27, 2006. He
4	emailed me this yesterday.
5	I also have some written cross-examination,
6	but I'll await your timing on that.
7	CHAIRMAN OMAS: Is there any objection?
8	(No response.)
9	CHAIRMAN OMAS: Hearing none, please provide
10	the reporter with two copies of the corrected direct
11	testimony of Douglas F. Carlson.
12	That testimony is received into evidence.
L3	However, as is our practice, it will not be
L <b>4</b>	transcribed.
15	(The document referred to was
16	marked for identification as
17	Exhibit No. DFC-T-1 and was
18	received in evidence.)
19	CHAIRMAN OMAS: Ms. Dreifuss, have the
20	answers to the designated written cross-examination
2 1	been reviewed and corrected?
22	MS. DREIFUSS: I think so. I don't remember
23	exactly having that conversation with Mr. Carlson in
24	email, and I don't know. I hoaestly don't know if
25	there are any revisions

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1	I have two packets that were prepared by the
2	Commission's Docket Section, and I assume that these
3	would contain the designated responses that are
4	provided by the Postal Service and by the Commission,
5	so I'm assuming that in both cases these are the most
6	recent versions of interrogatory responses.
7	In addition, by motion I'd like to designate
8	an answer that was filed yesterday by Mr. Carlson.
9	CHAIRMAN OMAS: Without objection.
1 0	M\$. DREIFUSS: I have included yesterday's
11	filed answer in these two packets as well.
12	Let me also comment on the situation of the
13	declarations. Mr. Carlson filed on-line declarations
1.4	for the written cross-examination and for his
1 5	testimony, and I have attached those declarations at
16	the back of the testimony and these designated
17	packets. I understand Mr. Carlson will send in a
18	signed declaration within a day or two.
19	CHAIRMAN OMAS: All right. Thank you, Ms.
20	Dreifuss.
2 1	Would you please provide two copies of the
22	corrected designated written cross-examination of
23	Witness Carlson to the reporter?
24	That material is received into evidence and
25	is to be transcribed into the record.

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1		(The document referred to was
2		marked for identification as
3		Exhibit No. DFC-T-1 and was
4		received in evidence.)
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### BEFORE THE POSTAL RATE COMMISSION WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes, 2006

Docket No. R2006-1

DESIGNATIONOF WRITTEN CROSS-EXAMINATION
OF DOUGLAS F. CARLSON
WITNESS DOUGLAS F. CARLSON
(DFC-T-1)

**Party** 

Interroaatories

Postal Rate Commission

USPS/DFC-T1-3-4, 6, 8-9, 13, 16-22

**United States Postal Service** 

USPS/DFC-T1-1-22

Respestfully aubmitted,

Steven W. Williams

Secretary

### INTERROGATORY RESPONSES OF DOUGLAS F. CARLSON WITNESS DOUGLAS F. CARLSON (T-1) DESIGNATEDAS WRITTEN CROSS-EXAMINATION

Interrogatory	<u>Desianatina Parties</u>
USPSIDFC-TI-1	USPS
USPSIDFC-TI-2	USPS
USPSIDFC-TI-3	PRC. USPS
USPS/DFC-T1-4	PRC. USPS
USPSIDFC-TI-5	USPS
USPSIDFC-TI-6	PRC. USPS
USPSIDFC-TI-7	USPS
USPS IDFC-T I-8	PRC. USPS
USPSIDFC-TI-9	PRC. USPS
USPSIDFC-TI-10	USPS
USPSIDFC-TI-I1	USPS
USPSIDFC-TI-12	USPS
USPS/DFC-T1-13	PRC. USPS
USPSIDFC-TI-14	USPS
USPS/DFC-T1-15	USPS
USPSIDFC-TI-16	PRC. USPS
USPSIDFC-TI-17	PRC, USPS
USPSIDFC-TI-18	PRC. USPS
USPSIDFC-TI-19	PRC. USPS
USPSIDFC-TI-20	PRC. USPS
USPSIDFC-TI-21	PRC. USPS
USPSIDFC-TI-22	PRC. USPS

**USPS/DFC-T1-1.** Please refer to page 6, lines 13-22, of your testimony, where you identify tasks associated with the acceptance of a regular return receipt by a window clerk.

- a. How many times have you observed this acceptance process? Please provide all supporting documentation related to these observations.
- b. How many of these observations involved customers other than you?
- c. Are there any functions a window clerk might perform that you have not listed. If yes, please describe fully and explain why you did not list these functions.

- a. I am unable to estimate the number of times that I have observed a window clerk accept a regular return receipt, either for me or for another customer in line. I have been visiting post offices regularly since a young age. I have had a post-office box since 1983. For approximately eight of the years since 1983, my post office had no lockers for large articles, so I waited in line to pick up mail every time an article was delivered to me that was too large for my box. During all these years, I waited in line whenever an article required my signature upon delivery. Moreover, I normally buy most new postage stamps at post offices after they are issued, so I observe many more transactions than the typical American stamp buyer. I believe that the number of regular return receipt acceptance transactions that I have observed numbers in the hundreds at a minimum. I have no documents related to my observations except for some mailing receipts and return receipts that I have received and retained.
- b. A majority of the transactions did not involve me. However, when I am in line at the post office, I usually observe quite attentively because I am interested in the activity.
- c. Other functions, such as processing the customer's form of payment, may occur for some or all transactions. My testimony does not claim that the

list of functions is exclusive. It simply points out several functions that a window clerk may perform for a regular return receipt that a window clerk would not perform for electronic return receipt. I am not seeking to identify every possible function, as the list I provided should raise sufficient doubts about the Postal Service's use of window acceptance times for regular return receipt as a proxy for window acceptance times for electronic return receipt,

Please note that the sentence in my testimony at page 6, lines 10–12 should be modified as follows: "Although each transaction varies somewhat, acceptance of a regular return receipt may require the window clerk **to** perform some **er all** of the following functions[.]" This correction will maintain consistency with footnote 1 on page 6.

**USPSIDFC-TI-2.** Please refer to page **6**, line **25** through page **7**, line **6** of your testimony.

- a. How many of this type of transaction have you personally observed or for which you have secondhand knowledge? Please provide any documentation of your observations.
- b. Do **you** have any documentation to support your claim that "This dialogue likely describes the extent of the discussion for customers who are familiar with the service." If so, please provide it.

- a. I am unclear to exactly which "type" of transaction the question refers. In any event, I have observed and have personal knowledge of only one electronic return receipt transaction. I was the customer. The dialogue provided in my testimony is hypothetical but realistic.
- b. No,

**USPS/DFC-T1-3.** Please refer to page 7, lines 7 through 16 of your testimony.

- a. How many of this type of transaction have you personally observed or for which you have secondhand knowledge? Please provide any documentation of your observations.
- b. Do you believe it is possible that a customer not familiar with electronic return receipt service might ask more questions, such as:

"Do I need a computer?";

"What do I do if I don't have an email address?";

"Do I get all the same delivery information I get on the green card?";

"Do I get a real signature?";

"Do I also get a postcard with the real signature?"; or

"Do you keep the original signature on file in case I need it?"

Please explain any negative response

- a. I am unclear to exactly which "type" of transaction the question refers. In any event, I have observed and have personal knowledge of only one electronic return receipt transaction. Iwas the customer. The dialogue provided in my testimony is hypothetical but realistic.
- b. A customer conceivably could ask any of the questions listed in the interrogatory, although most customers would be unlikely to ask these basic questions about the service more than once. The Postal Service also could provide information, such as brochures, signs, and text on its Internet Web site, that would answer customers' questions before customers reached the service window. Window clerks should not be the only source of information for customers seeking information about electronic return receipt.

**USPS/DFC-T1-4.** Please refer to your testimony on page 8, lines 17 through 19, where you note the difficulty of observing a statistically significant number of electronic-return receipt transactions. Absent a statistically significant number of transaction observations with which to calculate an actual per-piece cost, would not a proxy serve as the next best thing with which **to** estimate a cost? If no, why not?

#### **RESPONSE:**

Proxies may be used to determine costs for postal rate-setting when they reasonably reflect the costs that the underlying service incurs. The similarities between regular return receipt and electronic return receipt largely begin and end with the words "return receipt" in the name. The acceptance processes for each service are very different. The Postal Service has not explained why the window acceptance costs for regular return receipt supposedly reflect the window acceptance costs of electronic return receipt. A proxy is not a magic wand that can be waved **to** substantiate costs for another service.

**USPS/DFC-T1-5**. Please provide all studies you conducted and records of observations you made that would provide statistically valid estimates for electronic return receipt window transactions pertaining to:

- 1) Window acceptance transaction times;
- 2) Window acceptance cost development; or
- Window transaction processes cited on page 7, lines 1 through 13, of your testimony.

### **RESPONSE:**

I have conducted no studies, nor have I compiled records, that would provide statistically valid estimates for window acceptance transaction times, window acceptance cost development, or window transaction processes. My testimony does not assert a particular cost for window acceptance of electronic return receipt. It does, however, cast serious doubt on the Postal Service's cost estimate.

**USPSIDFC-T1-6.** Please refer to your testimony on page 8, lines 29 through 30. **Is** it your opinion that the value of service criterion is the only factor or measurement to consider when determining a cost coverage and a proposed fee? If no, what other factors or measurements would you consider?

#### **RESPONSE:**

Witness Berkeley proposes a higher cost coverage for electronic return receipt than regular return receipt on the grounds that electronic return receipt has a higher value of service than regular return receipt. See, e.g., DFC/USPS-T39-2. My testimony on page 8, lines 29–30 rebuts her claim. My testimony does not consider all possible rate-setting criteria.

I do not believe that value of service *is* the only factor or measurement that the Commission can consider when determining a cost coverage and a proposed fee. I would consider all criteria in 39 U.S.C. § 3622 and 39 U.S.C. § 3623, *to* the extent that those criteria applied to a particular service. I am aware of no rate-setting criteria that would undermine my recommendation for identical cost coverages for electronic return receipt and regular return receipt.

**USPSIDFC-TI-7.** Please refer to your testimony on page 10, lines 1-4. Since you mention that you "have tracked delivery of these items extensively", please provide the following information.

- a. Please give a breakdown of the destination of the several hundred diplomas; e.g., to the San Francisco area, to other California destinations, to neighboring states, etc.
- **b.** Was return receipt service purchased for any of the certified mail flats? If yes, please provide the percentage of each type of return receipt service used.
- c. Prior to 2004, how were these diplomas mailed? Were any special services used?

- **a.** To respond to this interrogatory, **I** reviewed data from representative mailings in 2005 and 2006, including a mailing that we conducted between September 15 and 19, 2006. In these mailings, we sent **48** percent of our diplomas to addresses in the greater San Francisco Bay Area (ZIP Codes 939–954), 30 percent to addresses in other California cities, and 21 percent to other states. (The percentages *do* not add up to 100 due to rounding.)
- **b.** We did not purchase return receipt service for any diplomas that we mailed as Certified Mail flats.
- c. Immediately prior to my arrival in my current position in September 2004, the university did not use the Postal Service to deliver diplomas.

**USPS/DFC-T1-8**. Please refer to your testimony on page 10, lines 21-23. Is it your opinion that Signature Confirmation is a similar service to certified mail with return receipt service in any other ways besides the time to provide an electronic copy of the signature? Please explain fully.

#### **RESPONSE:**

Signature Confirmation is relevant to my testimony only to the extent that the time required for an electronic signature for Signature Confirmation to be provided to the customer should be the same as the time required for an electronic signature for electronic return receipt to be provided to the customer. The signature-collection process for each service is the same: the Web interface for each service is similar; and the Postal Service provides signatures by e-mail in the same way for each service.

I do note that both Signature confirmation and Certified Mail with electronic return receipt provide customers with a mailing receipt, on-line and telephone access to the date and time of delivery, and an electronic copy of the signature by e-mail. Other similarities may exist that I have not considered.

I believe that customers who purchase Signature Confirmation can choose to receive the signature by fax or mail, whereas e-mail is the only option for electronic return receipt. **Also**, customers can purchase Signature Confirmation for some classes of mail for which customers cannot purchase Certified Mail Moreover, Certified Mail is available for First-class letters and flats, while Signature Confirmation is not. Other differences may exist.

**USPS/DFC-T1-9**. On page 9, lines 8-9, of your testimony you state, 'In my experience, regular return receipts usually are mailed on the day of delivery." Please describe your experience in more detail, including the locations from which the return receipt were mailed, all data you collected, and what proportion of regular return receipts were not mailed on the day **of** delivery.

#### **RESPONSE:**

I have no data, nor do I claim to have conducted a statistically significant study. My testimony is based on my experience in the past five years. I simply do not recall an instance of a regular return receipt not being mailed back to me on the day **of** receipt. I am aware of problems in the past with delivery of return receipts to high-volume recipients such as tax agencies, but for the typical return receipt delivered by a letter carrier, I believe that the return receipts usually are mailed back on the day of receipt. I see no reason why they should **not** be mailed back on the day of receipt, since mail that carriers collect on their routes usually is transported to the processing plant on the same day.

Also, the Postal Service Law Department routinely sends mail to me by Certified Mail with a return receipt requested, and the window clerks at my station regularly **toss** the return receipts in their outgoing mail tub immediately after they date-stamp them.

**USPS/DFC-T1-10.** Please refer to your testimony on page 9, lines 23 through 24. **Is** it your understanding that a CFS site **is** located at the main facility where the post offices, stations and branches will be taking or having their mail taken daily for processing? If not, please explain.

#### **RESPONSE:**

Some, and perhaps most, CFS sites are located at a processing and distribution center (P&DC) or processing and distribution facility (P&DF). However, the response to DFC/USPS-T39-53 confirms that many CFS sites are not located at the P&DC or P&DF to which post offices, stations, and branches transport their mail for daily processing. Examples include, but by no means are limited to, the Sacramento CFS site, which serves San Jose (including Salinas), Stockton, Reno, Fresno, and Redding in addition to Sacramento; the Santa Clarita CFS site, which serves Los Angeles (902–904 only), Long Beach, Pasadena, Oxnard, Santa Barbara, and Bakersfield (including Mojave), in addition to the Santa Clarita/Van Nuys area; and the Flushing CFS site, which serves Staten Island and Brooklyn, in addition to the Flushing area.

Some CFS sites are not even located at **a** P&DC. Examples include Sacramento and San Francisco.

The need to transport Forms 3849 to the CFS site almost certainly adds to the time required to provide signatures to customers.

**USPS/DFC-T1-11.** Please refer to page 11, lines 3 through **6**, of your testimony. Did you request the Proof of Delivery letters in all of the **49** cited instances because it was uncertain as to whether or not delivery had taken place? If so, why did you wait approximately two weeks after delivery? If not, for what purpose did you request the Proof of Delivery letters?

### **RESPONSE:**

I requested Proof of Delivery letters because I wanted to collect data on whether signatures were obtained and made available to me.

**USPSIDFC-TI-12.** Please refer *to* page 11, lines 13 through 14, of your testimony. Please quantify, and provide all data/documentation *to* support your claim of "many instances."

#### **RESPONSE:**

I based the statement in my testimony on the data provided in my testimony at page 11, lines 24–28 to page 12, lines 1–5.

Data I have collected since filing my testimony continues to substantiate my claim. On September 15, **18**, and 19, 2006, **we** mailed 134 diplomas as First-Class parcels with Signature Confirmation. So far, I have received nine Proof of Delivery letters indicating that no signature is on file. (Actually, I received many more than nine Proof of Delivery letters indicating that no signature was on file, but my subsequent queries determined that signatures eventually appeared for some shipments 12 *or* more days after delivery.)

**USPS/DFC-T1-13**. Please refer **to** page **11**, lines 20 through 22, of your testimony. For the mailing of certified mail flats you reference, please provide the following information:

- Total number of certified mail flats mailed
- b. Was the First-class postage rate paid or the Priority Mail postage rate or a combination of both?
- c. Number of flats with basic return receipt service
- d. Number of flats with electronic return receipt service
- e. Confirm that this referenced mailing was made in one acceptance event. If you cannot confirm, please provide details as to how many collections or acceptances there were for this 'mailing."
- f. Number of days from initial acceptance of the mailing to the last time you checked for the 10 percent not receiving a scan.

- a. I do not know the exact number of flats for the mailing referenced in my testimony because I did not make electronic records. All the records are now distributed among hundreds of paper files. However, I believe that the number of flats was between 60 and 100, and I recall that no delivery information was recorded for at least 10 or 11 flats. My review of data for subsequent mailings suggests that the Postal Service's statistic showing that the Postal Service does not record a signature for 4.2 percent of mail pieces for which customers purchased an electronic return receipt probably reflects my overall experience. I mentioned the 10-percent figure in my testimony because the scan rate for that mailing was particularly low. For that mailing, the Certified Mail labels were placed at the top of the flat, in accordance with Postal Service instructions. I find that the scan rate is higher when we place the Certified Mail label directly to the left of the address, as we have done for most other mailings.
- b. We paid weight-based First-class Mail postage.
- c. Zero.
- d. Zero.

- e. I believe that all flats were mailed at the same time, but they may have been spread over a two-day or three-day period.
- f. I believe that my final check was **two** to three months after the mailing date. At that point, I removed the records from my office and asked my staff to file them.

USPSIDFC-TI-14. Please refer to page 11, lines 24 through 28, of your testimony.

- (a) Why didn't you follow up to see if the signatures ultimately were posted?
- (b) Is it possible that the number of unposted signatures is less than 34? If not, why not?

- a. I did not have time to follow up while preparing this testimony because the process of requesting Proof of Delivery letters, waiting for data to be restored from off-line files, waiting for the letters to arrive, reviewing information in PDF files, and transferring the data to a spreadsheet is cumbersome. Moreover, as is clear from the context in my testimony, the purpose of the example cited in my testimony was to demonstrate the Postal Service's delay in compiling and providing electronic copies of signatures. Therefore, I determined that following up to check on the existence of signatures was not necessaiv.
- b. Yes.

**USPS/DFC-T1-15.** Please refer to page 11, line 27. [sic] through page 12, line 1, of your testimony. With respect to this specific mailing:

- a. Where were this mailpieces destined?
- b. Were all of these mailpieces similarly sized?
- **c.** What sizes were these mailpieces? Please provide envelope or box dimensions.
- d. What class of mail was used for these mailpieces?

- a. I did not make electronic records of this mailing, so all the addresses are now distributed among hundreds of paper files. However, the destinations should be consistent with the general geographic distribution of our mailings that I provided in response to USPSIDFC-TI-7.
- b. Yes.
- c. 81/8" x 113/8" x 1/8"
- d. First-class Mail.

**USPS/DFC-T1-16.** Please refer to page **12**, lines 19 through 23, of your testimony.

- a. In your experience, how many people do you know who use basic return receipt service?
- b. In your experience, how many people do you know who use electronic return receipt service?
- c. What is the nature of the mailings of the people you know from experience who may later need to prove delivery?
- **d.** What percentage of the mailings with return receipt service of the people you know from experience will later need to prove delivery? Please breakdown by type of return receipt service.

- a. I assume that almost every person I have met or encountered has used regular return receipt service at least once in hislher life. I am unable to estimate the number of people I have met or encountered during my lifetime.
- b. None.
- c. I am aware of people who send letters to businesses with whom they are involved in a dispute. Some people purchase return receipt service when they mail their tax returns. Law firms use regular return receipt service to send correspondence to people and businesses. Some people use return receipt service when they send correspondence to my office that they consider to be important.
- d. I cannot immediately recall a single instance in which I observed a person actually present the return receipt to prove delivery of correspondence. I do not believe that I ever have. In my opinion, people and businesses usually do not dispute receipt of correspondence for which they signed upon delivery. I have heard that the return receipt may be important when a plaintiff in small-claims court is seeking a default judgment against a defendant who does not show up in court. If the court served the summons by Certified Mail, the judge may want to see that the defendant signed the return receipt before the judge enters a default judgment.

**USPS/DFC-T1-17.** Please refer to page **14**, line **7**, of your testimony.

- a. Please define "delay" with respect to a quantifiable amount of time.
- **b.** Please provide all data and studies you are aware of that you relied on when making this statement.

#### **RESPONSE:**

The delays to which I refer range from several hours to one day. On weekdays, acceptance transactions typically show up in the tracking system in the evening — but perhaps not until the customer has tried several times to register his e-mail address. For Saturday acceptance transactions, I often do not see the acceptance transaction in the tracking system until Sunday.

I have compiled no data nor conducted any studies on the delay. I saw no need to compile data or conduct studies because the delay is readily observable and predictable.

**USPSIDFC-TI-18.** Please refer to page 14, lines 26 through **28**, of your testimony. By "overwhelming desire for certified mail customers to obtain the recipient's signature" are you referring to a pen and ink signature or signature image? If not a pen and ink signature, please explain fully.

#### **RESPONSE:**

I am referring to a signature. I have no reason to believe that most customers distinguish between a hard-copy signature and a scanned image of a signature. Many customers conduct transactions using fax machines, so I believe that many customers understand that facsimile images of signatures carry legal weight and significance. When the Postal Service ceased to retain hard-copy signatures on tile, without any particularly prominent notice to the public about this change, presumably the Postal Service had already conducted its own analysis and confirmed that electronic signatures would continue to meet customers' needs.

USPS/DFC-T1-19. Please refer to page 15, lines 2 through 8, of your testimony.

- a. Do you believe that any mail service sold at a window unit incurs window acceptance costs? If your answer is anything other than an unqualified "yes", please explain fully.
- b. Do you believe the electronic return receipt service is only "sending an email message"? If not, please explain fully.
- c. Do you think it is possible that the Postal Service would need to explain electronic return receipt service to some customers (such as how to provide the email address), even if it were included as part of certified mail service? If not, please explain fully

- a. In theory, yes. However, when the Postal Service proposed to provide the delivery date and time as a feature of basic Certified Mail service, the Postal Service did not estimate an increase in window acceptance costs due to the possible need to explain this service feature to customers. Therefore, in practice, the mere addition of a feature to a service may not result in an increase in costs for the purpose of postal rate-setting.
- b. My testimony intends to distinguish between the window-acceptance costs and the costs associated with actually delivering the service whose features the customer desired. A customer who purchases an electronic return receipt probably thinks of the delivery of the return receipt as the provision of the service; this customer probably does not think of the window transaction as a component of the service he was purchasing. While one certainly could consider the window-acceptance transaction a component of "providing" electronic return receipt service, I sought to separate costs associated with the window transaction from costs associated with delivering the service whose features the customer desired —i.e., the actual return receipt.
- c. The Postal Service probably would need to explain the service to some customers. However, the extent to which these explanations would need to take place during face-to-face encounters with a window clerk is

unclear. The Postal Service uses written communication, through brochures, publications, and lobby signs, to inform customers that Certified Mail provides the date and time of delivery — a new service feature implemented in 2002. Among other places, this information appears in *A* Customer's Guide to Mailing (Domestic Mail Manual 100 Series), in a brochure titled *Simplify Your Business with a P.O. Box &* Certified Mail™ Service, on Sign 355 for the lobby, and on the Certified Mail Receipt (PS Form 3800). This information also appears at www.usps.com.

**USPSIDFC-TI-20.** Please refer to page 15, lines 9 through 10, of your testimony. Please confirm that regardless of how certified mail customers currently deposit mail, they can have access to the original signature by using basic return receipt. If you cannot confirm, please explain fully.

### **RESPONSE:**

Confirmed. However, currently customers must incur a significant additional expense for a separate service to obtain a hard-copy signature. Filling out a return receipt is time consuming, particularly when a person is mailing multiple pieces of mail. If an electronic copy of the signature were a feature of basic Certified Mail service, customers still would have the option of obtaining the original signature by using regular return receipt service.

**USPS/DFC-T1-21**. Please refer to page **15**, lines **13** through **15**, of your testimony.

- a. Please confirm that electronic return receipt service provides an electronic image of a signature. If you cannot confirm, please explain.
- b. Considering that .09 percent of the certified mail customers purchasing return receipt service in 2005 requested electronic return receipt service and 86.8 percent of certified mail customers requested basic return receipt service, would you agree that 'most" certified mail customers want the original signature and not the electronic signature image? If not, please explain fully.
- c. Do you believe that at least some certified mail customers want the original signature, rather than a copy of the signature image? Please explain any negative response.
- d. Why should any certified mail customers be forced to pay more for certified mail service because of the addition of a service feature they don't ever use?

- a. Confirmed.
- b. No. I do not believe that many postal customers know about electronic return receipt service. No window clerk has ever offered the service to me, even though I have conducted at least 15 Certified Mail transactions (with no regular return receipt attached) in the past three years, nor have I heard any window clerk discuss this option with a customer. The first time I tried to purchase an electronic return receipt, a window clerk quite assertively denied that the service existed. Only as I headed out the door of the post office at closing time and mentioned the problem to a supervisor or manager at the door did I succeed in purchasing the service. The low volume of transactions suggests that customers do not know about the service, and perhaps window clerks do not, either. Also. customers who do not visit the post office to deposit their Certified Mail cannot purchase this service.
- c. A possibility exists that some customers want an original signature.

### RESPONSE OF DOUGLAS **F.** CARLSON TO INTERROGATORY **OF** THE UNITED STATES POSTAL SERVICE

d. The question assumes that customers "don't ever use" an electronic signature, an option that most customers probably do not know about and that many cannot purchase. The same question could be asked about why customers who want a return receipt are forced to pay for Certified Mail service, which provides many additional service features that many customers probably do not need. Window clerks surely have met many customers who wanted only a return receipt and were disappointed to learn that they needed to purchase Certified Mail service first in order to purchase a return receipt.

If a streamlined service offering combining two services benefits the vast majority of customers with, at most, a smell fee increase, the new service offering may provide better service and value overall, and maximize consumer utility, even if a small minority of customers would prefer not to receive both services.

### RESPONSE OF DOUGLAS F. CARLSON TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

**USPSIDFC-TI-22.** Please refer to page 15, line 29, through page 16, line 2, of your testimony.

- a. Would you propose that electronic return receipt service be included as part of the basic service for COD, insured mail and registered mail? Please explain fully.
- b. Specifically how would the classification schedule be simplified if an electronic copy of the signature was [sic] a basic feature of certified mail? Please explain fully.
- c. How would the convenience of certified mail service be increased for any other than the non-high volume electronic return receipt customers if the electronic copy of the signature was a basic feature of certified mail?

Please explain fully.

#### **RESPONSE:**

- a. I am proposing the service enhancement for Certified Mail only. I have not considered the issues related to providing electronic return receipt as a basic feature of COD, Insured Mail, and Registered Mail. This question is worthy of consideration.
- b. Electronic return receipt as a separate service would no longer be an option for Certified Mail. With this feature folded into Certified Mail service, two services would be reduced to one, simplifying the classification schedule and, in particular, the tyoical customer's interaction with it. If electronic return receipt were folded into all host services, the classification schedule would be further simplified by completely eliminating electronic return receipt.
- c. I am not familiar with the process by which a high-volume mailer purchases electronic return receipt service, so \ am unable to make the requested comparison.

### RESPONSE OF DOUGLAS F. CARLSON TO INTERROGATORY OF DAVID B. POPKIN

**DBP/DFC-T1-1.** Please refer to your response to Interrogatory USPS/DFC-T1-12. For your mailings on September 15, 18, and 19,2006, how many days elapsed between the date of delivery and the date on which the Postal Service provided the recipient's signature to you? Please provide both an average and a maximum.

#### **RESPONSE:**

The average time for the Postal Service to provide the signature to me by e-mail was **4.59** to 5.74 days after delivery.

I am providing a range because of a feature of the Postal Service's Web tracking system. When customers request a Proof of Delivery letter at the Postal Service's Web site, the Postal Service will provide the Proof of Delivery letter almost immediately if the signature has been scanned and attached to the electronic delivery record. Otherwise, the Postal Service holds the request in a pending status for seven days. If the signature is riot on file after seven days, the Postal Service sends a Proof of Delivery letter reporting that no signature is on file.

Signatures sometimes show up more than seven days after delivery. For this study (and previous ones described in my testimony), I need to continue monitoring delivery records to determine whether signatures eventually arrive. Unfortunately, if a customer submits a new request for a Proof of Delivery letter more than seven days after delivery, the system provides a Proof of Delivery letter immediately. If no signature is available at the moment the request arrives, the Postal Service immediately sends another Proof of Delivery letter indicating that no signature is on file. Thus, when I receive the first Proof of Delivery letter indicating that no signature is on file, I cannot submit a new request and expect it to be held in a convenient pending status for seven days. Consequently, to calculate the time required to provide the signature, I would have needed to submit a request for a Proof of Delivery letter every day (for perhaps 20 or more items). This approach would have been impractical.

### RESPONSE **OF** DOUGLAS **F**. CARLSON TO INTERROGATORY OF DAVID **B**. POPKIN

As an alternative, I first recorded the number of days after delivery during which a signature initially was not available (X). (The initial value for X usually was 7.) Next, I submitted a new request for a Proof of Delivery letter several days later (Y days after delivery). If the signature was immediately available, I knew that the signature became available between X and Y days after delivery. I sometimes performed this routine for two to four rounds after delivery, each time updating my value for X.

In the end, 16 signatures arrived **so** late that I knew only **the** range of days required for the signature **to** be available (X to Y). The range of days for these signatures was 7 to 22. I arrived at the lower average of 4.59 days for the entire mailing by using the low end of the range (X) for each late signature, and I arrived at the higher average of 5.74 days by using the high end of the range (Y) for each late signature. The true average probably is somewhere in the middle.

The longest definitive, confirmed number of days to provide a signature was **14.** Seven signatures definitely did not show up for **10** days or more.

The median number of days to delivery was four.

#### **DECLARATION OF DOUGLAS F. CARLSON**

I declare under penalty of perjury that I personally prepared my responses
to the written cross-examination and that, if called to testify under oath, my
responses to the written cross-examination would be my testimony.

DOUGLAS F. CARLSON

Dated: October 27, 2006

1	CHAIRMAN OMAS: Is there any additional
2	cross-examination for Witness Carlson?
3	(No response.)
4	CHAIRMAN OMAS: Mr. Straus, do you have a
5	corrected version of Mr. Paul's testimony to move into
6	evidence?
7	MR. STRAUS: I have the original version,
8	which as far as we know required no correction.
9	Should I go ahead and do that?
L <b>.</b> 0	CHAIRMAN OMAS: Yes. Would you like to move
L1	it into evidence?
12	MR. STRAUS: Yes, Mr. Chairman. I have the
L3	Direct Testimony of Robert Paul on behalf of Growing
L4	Family. It consists of the written testimony, which
L5	is designated GF-T-1, along with Exhibits RP-1 through
L6	RP-8.
L7	I also have an original signed declaration
L8	by Mr. Paul affirming that his testimony and
19	interrogatories are accurate and true to the best of
20	his knowledge.
21	I will hand both the declaration and the two
22	copies to the reporter.
23	CHAIRMAN OMAS: Is there any objection?
24	(No response.)
25	CHAIRMAN OMAS: Hearing none, I will direct
	Heritage Reporting Corporation (202) 628-4888

1	counsel to provide the reporter with two copies of the
2	corrected direct testimony of Robert Paul.
3	That testimony is received into evidence.
4	However, as is our practice, it will not be
5	transcribed.
6	(The document referred to was
7	marked for identification as
8	Exhibit No. GF-T-1 and was
9	received in evidence.)
1 0	CHAIRMAN OMAS: Mr. Straus, have the answers
11	to the designated written cross-examination been
12	reviewed and corrected?
13	MR. STRAUS: They have been reviewed, and
14	again they required no correction.
15	CHAIRMAN OMAS: All right. Would you please
16	provide two copies of the corrected designated written
17	cross-examination of Witness Paul to the reporter?
18	That material is received into evidence and
19	is to be transcribed into the record.
20	(The document referred to was
2 1	marked for identification as
22	Exhibit No. GF-T-1 and was
23	received in evidence.)
24	//
25	//

## BEFORE *THE*POSTAL RATE COMMISSION WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes, 2006

Docket No. R2006-1

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF GROWING FAMILY, INC.
WITNESS ROBERT PAUL
(GF-T-1)

Party <u>Interrogatories</u>

Office of the Consumer Advocate USPSIGF-TI-1-18

Postal Rate Commission USPS/GF-T1-1-5, 9-17

Respectfully submitted.

Stem W. Walker

Steven W. Williams

Secretary



#### INTERROGATORY RESPONSES OF GROWING FAMILY, INC. WITNESS ROBERT PAUL (T-1) DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory	Designating Parties
USPSIGF-TI-1	OCA, PRC
USPSIGF-TI-2	OCA, PRC
USPSIGF-T1-3	OCA, PRC
USPS/GF-T1-4	OCA, PRC
USPSIGF-T1-5	OCA, PRC
USPSIGF-TI-6	OCA
USPSIGF-T1-7	OCA
USPSIGF-TI-8	OCA
USPS/GF-T1-9	OCA, PRC
USPS/GF-T1-10	OCA, PRC
USPSIGF-TI-11	OCA, PRC
USPSIGF-TI-12	OCA, PRC
USPS/GF-T1-13	OCA, PRC
USPSIGF-TI-14	OCA, PRC
USPS/GF-T1-15	OCA, PRC
USPSIGF-TI-16	OCA, PRC
USPS/GF-T1-17	OCA, PRC
USPSIGF-TI-18	OCA

## RESPONSES OF GROWING FAMILY, INC. TO USPS FIRST INTERROGATORIES TO GROWING FAMILY, INC. WITNESS PAUL (USPSIGF-TI-1-5)

**USPS/GF-T1-1**. Please refer to your testimony at page 1, lines 6-7, where you state that "Approximately 10% of our total shipments are sent via the USPS's COD service."

- (a) What alternative methods does Growing Family use to send the photography orders to the other 90 percent of customers, and what percentage **c** total shipments are sent via each of those alternative methods?
- (b) How is payment made for those other customers?

#### **RESPONSE:**

- (a) The remaining 90% are sent by U.S. mail, but not COD.
- (b) Payment by **those** customers is made in advance, usually by check or credit card, but occasionally by cash or money order.

## RESPONSES OF GROWING FAMILY, INC. TO USPS FIRST INTERROGATORIES TO GROWING FAMILY, INC. WITNESS PAUL (USPS/GF-T1-1-5)

**USPS/GF-T1-2**. Please refer to your testimony at page **1**, lines 7-8, where you state that "the recipients of Growing Family's COD packages have the option of unopened either paying the retail price for the photographs or refusing the packages unopened..." Approximately what percent of the recipients pay for the photos, and what percent refused the packages unopened?

#### **RESPONSE:**

Growing Family, as my testimony stresses, does not knnw what percentage of the COD addressees pay for or refuse the packages. We know only the number of customers whose payments are provided to us by the Postal Service and the number of undelivered packages that are returned to us either because they have been refused by the customer or because the carrier was unable to effect delivery. When we receive neither the payment nor the package, which happens 34% of the time, we do not know whether the package was:

- 1. delivered to the customer without collecting payment,
- 2. paid for by the customer and the payment lost or mislaid by the carrier,
- 3. paid for by the customer and the payment lost in the USPS accounting system or
- 4. the package was destroyed or discarded by the **USPS**.

With this qualification, according to our records:

- we receive the payment for approximately 64% of COD shipments,
- we receive the returned package approximately 34% of the time, and
- approximately 2% of the time we receive an indemnity payment.
  - o We file claims for about 4% of all **COD** packages shipped, generally about 90 days after the date of shipment. About half of our claims are resolved by the remittance or package being returned to us after the claim is filed. that is, 90 days or more after the mailing.

To summarize what we think happens:

- Approximately 34% of all COD packages are returned to us because they are either undeliverable as addressed (customer provided the wrong address or moved without a forwarding address) or they are refused by the addressee.
- Approximately 66% of all COD packages are successfully delivered by USPS to the addressee. Of this 66%, 97% of the time USPS, collects the payment, and successfully remits the payment to us. However, of the 66% of the packages that are successfully delivered, 3% of the time (2% of total packages) either the package is delivered by the carrier and the carrier does not receive payment from the addressee, or the carrier and USPS fail in getting the payment back to Growing Family.

## RESPONSES OF GROWING FAMILY, INC. TO USPS FIRST INTERROGATORIES TO GROWING FAMILY, INC. WITNESS PAUL (USPS/GF-T1-1-5)

**USPS/GF-T1-3**. Please refer to page 13, lines 2-3 of your testimony, where you state that "we have surveyed addressees from whom we have received neither payment nor the funds."

- (a) Please provide the results of any and all surveys Growing Family has conducted since January 1, 1997, of customers from whom it has not received payment. Please provide all the underlying data from such surveys.
- (b) Please describe any policies or practices Growing Family has concerning customers from whom it has not received payment.

#### RESPONSE

- (a) These surveys are conducted informally, and few records are kept. Attached please find all related documents that we have been able to locate.
- (b) This question is not clear to me. If a package is sent COD and a customer refuses the package or delivery is not possible and the package is returned; we do not re-mail that package to the customer. We may telephone the customers at a later time to try to sell them a package of photos, but ordinarily by the time a package is returned to us, enough time has elapsed that the customer is not as interested in purchasing the photos as they were at the time they placed their order (new expenses associated with the baby, they have probably taken other photos more recently, etc.).

If a package is sent COD and the Postal Service does not return the package or the payment, our only practical way to get paid for those photos is to tile a claim with the USPS. Our policy is to file a claim, as provided for in the postal regulations. We have no way of knowing which, if any, of the customers involved in these claims paid (or did not pay) the carrier. As a practical matter, since the customers do not generally need anything else from us (unless and until they want photos of a subsequent baby). we have no leverage to get them to send a replacement payment (if they paid by check) or to make a payment (if the photos were left without collecting payment). With no practical legal recourse, we believe that the small number of people who want to pay will not justify the costs of trying to mail collection letters or make collection phone calls (even assuming that the customers still have the same addresses and phone numbers as when they ordered their photos).

In addition, we do not believe, despite the Postal Service's categorization of claims, that any significant number of our packages are truly "lost." They are substantial and can't simply vaporize. Rather, we tend to believe, packages are deemed lost when they are left without any payment being collected, when the carrier permits the recipient to open the package and examine the contents before paying (and must then "lose" the package if it is refused), or for other reasons not involving a truly "lost" package.

From: Russell, Ronna [rrussell@GrowingFamily.com]
Sent: Wednesday, September 14,2005 9:45 AM

To: Spellmeyer, Jim; Cook, Tim

Subject: RE: CODProject for Calf Outs - need detail on the 23

#### Jim,

I sent the list over to Steve via interoffice mail last week. You might want to check his interoffice envelops from me. Ifyou can't find it, let me know and I will send you another copy later today.

----Original Message----From: Spellmeyer, Jim

Sent: Tuesday, September 13, 2005 6:08 PH

To: Russell, Ronna; Cook, Tim

Subject: RE; COO Project for Call Outs - need detail on the 23

Tim I Ronna:

I'm sorry if you have already provided this information to Steve.

Steve is out on vendor visits for the next two days, and I'm trying to yet our "ducks in a row" for the reply to the USPS regarding the "lost" packages [or money] issue.

Can you provide the customer numbers, etc. that go with the results of the survey? Need the customer numbers or order numbers I names, or whatever...

Thanks.

Jim

----Original Message---From: Benz, Steve

Sent: Wednesday, August 31, 2005 12:34 PM

To: Spellmeyer, Jim

Subject: R E COD Project for Call Outs

#### No, never received the list of the 23, but will try to get again from the CCC

----Original Message----From: Spellmeyer, Jim

Sent: Wednesday, August 31, 2005 10:11 AM

To: Benz, Steve

Subject: FW: COO Project for Call Outs

Steve: Did we ever get any details on the 23 customers?

If we can get the list, we can develop a plan. Need to be sure we didn't get the check from them and apply to wrong Mom or just force it!!

----Original Message---Fmm: Spellmeyer, Jim

Sent: Tuesday, lune 14, 2005 5:48 PM

To: Barnett Max

Subject: COD Project for Call Outs

#### Max:

I haven't see the script or heard the calls, but the results look better than expected so far

Of 284 numbers, 253 (89%) unable to contact

Offine ones we contacted,

8 (26%) say the package was not delivered. but

23 (74%) say it was and they paid for it!

Jim

----Original Message-----

Fram: Benz, Steve

Sent: Tuesday, June 14, 2005 5:03 PM

To: Spellmeyer, Jim

Subject: FW: COD Project for Call Outs

Jim, don't know if Tim sent you his first email below or not, re: the *CCC* Project for calling COD Customers whom we received a Claim check on. As you can see, they were only able to contact about 15% which is not good, however, the good news is they contacted (23) customers who claimed they paid the USPS money for their COD Delivery.

I need to get the details behind these (23) customers......

----Original Message----

From: Cook, Tim

Sent: Tuesday, June 14,2005 12:11 PM

To: Benz, Steve

Subject: RE: COD Project for call Outs

**Yes**, and **we called** back multiple times in day and evening to get **that** many... just not at home **or** not answering us.

----Original Message----

From: Benz, Steve

Sent: Tuesday, lune 14,2005 11:21 AM

To: Cook, Tim

Subject: RE: COD Project for call Outs

thx, Tim, So......how many did the reps actually talk to, 23 Paid + 9 No English + 8 Postman never delivered + 2 Not home when delivered = 42 TOTAL?? (if so, that'd be almost 15%. which is about what we averaged in our last 2 call tests).

----Original Message----

From: Cook, Tim

Sent: Tuesday, June 14, 2005 907 AM

To: Benz, Steve

Subject: FW: COD Project for Call Outs

Steve, here is the info from the COD customers we called.

---Original Message----

From: Russell, Ronna

Sent: Monday, June 13, 2005 5 13 PM

To: Cook, Tim

Subject: COD Project for Call Outs

Tim,

Here are the results of the COD Call out program that we did for Steve I thought you mght want Io give him the info Let me know if you need more details

Here is the breakdown...out of 284 numbers.

105 No Answer 102 Disconnected 23 ## PdW/ck or cash 23 Wrong Number/Moved No English 9 Mom not home Call Back 9 Postman Never Delivered Mom Hung Up 2 Not Home W/Delivered Message Phone Only

Ronna Russell Operations Manager, Customer Care Center Growing Family, Inc. 636-946-5136ext 2101 Rrussell@growingfamily.com From: Cool

Cook, Tim [took@GrowingFamily.com]

Sent:

Thursday, June 09,2005 9:36 AM

To:

Spellmeyer, Jim

Subject: RE: Contact of COD customers still planned for this week?

We actually **started** these calls Wednesday, I believe, during the day. We just took your suggestions and folded them into a script to use. I don't believe I still have the one from last time. We are going to have to go into the later afternoon/evening hours to complete as many of these leads are not at home. My guess is that we will be calling on them throughout the rest of the week.....

#### Tim.

---- Orlginal Message---

From: Speltmeyer, Jim

Sent: Wednesday, lune 08, 2005 1037AM

To: Cook, Tim

Subject: Contact of COD customers still planned for this week?

Tim:

What are you using for a script and do you still have the script from last time the test was done?

Are you planning on just calling during the day, or evenings as well

If I were going to be involved, I would want to listen to the first three or four calls to see how things are going right from the start

Jim

----Original Message----

From: Cook, Tim

Sent: Thursday, June 02, 2005 10:17 AM

To: **Spellmeyer, Jim** 

Subject: Contact of COD customers

Jim, we won't be able to work this campaign into our Outbound group until sometime late next week. I already discussed this with Max so we know what we are after in the calls. I will let you know once we start calling in case you want to sit with 2 rep.

Thanks,

Tim Cook
Vice President. Customer Care Center
Growing Family. Inc.
3613 Mueller Road
St. Charles, MO 63301
(636) 946-5136. ext. 2100
Cell: (636) 699-6262

From: Benz, Steve [sbenz@GrowingFamily.com]

Sent: Tuesday, May 31,2005 4:40 PM

**To:** Spellmeyer, Jim

Subject: RE: CCC to contact (100) COD customers we received COD Claim \$\$ on??

FYIJim, I asked Tim about this issue (after our E-Check online training last Thursday), and he said "he worked this out with Max", and he now knows what we want????

----Original Message---From: Spellmeyer, Jim

Sent: Tuesday, May 31, 2005 3:31 PM

To: Benz, Steve

Subject: RE: CCC to contact (100) COD customers we received COD Claim \$\$ on??

Steve:

Time to joy his memory?

----original Message — From: Benz, Steve

Sent: Monday, May 23,2005 3:46 PM

To: Spellmeyer, Jim

Subject: FW: CCC to contact (100) COD customers we received COD Claim \$\$on??

Jim, here's the email I'd sent Tim. Hod called him previously, and was hoping to discuss exactly what we wanted (e.g. us to sit down with the reps when they begin calling, we may decide we don't have to call all several hundred customers, etc) in greater detail when he returned my call.

----Original Message —-From: Benz. Steve

Sent: Monday, May 23,2005913 AM

To: Cook, Tim Cc: Russell, Ronna

Subject: FW: CCC to contact (100) COD customers we received COD Claim \$\$ on??

FYI Tim/Ronna, Pis see my forwarded email below. Max had asked that I have the CCC contact about 100 COD Customers, whom we received payment of a "CODClaim" on from the Post Office (i.e. this would be where the Post Office paid us for a claim we submitted to them, because either a) they did delivered the pkg to Mom, yet the Post Office did NOT give us our money they collected: OR b) they did NOT make the delivery to Momand did NOT return the pkg to us.

Anyways, the ATTACHED FILE CONTAINS about 300 customers whom we'd like you to call and ask them I F they DID receive their PKG and if they PAID the Post Office courier.

I naddition, below is

Jim Spellmeyer's suggestions on a possible script you may use (in blue), and, also Jim would like he/I to sit in on some of these calls to the moms. Will call you to discuss as well. thx.

"chat up the Mom: Congrat's an the birth of \_\_\_\_ at \_\_\_ I'm from GFI in St. Charles.

MO and we do the official newborn baby photos at \_\_\_\_\_

- 1. Do you remember having a baby picture taken in the hospital?
- 2. Do you remember whether it was taken by one of our employees or o nurse in the hospital?
- 3. Was the person knowledgable. courteous, patient, etc... (rating 1 to 5)
- 4. Did you place an order with the photographer? In the hospital? by Mail?
- 5. When did you receive the pictures?
- **6.** Did they come by UPS. Postal service. FedEx?
- 7. Were they all OK, everything you ordered there, etc.?
- **8.** How did you pay for the pictures?
- 9. Did you like the quality of the pictures?
- **10.** Did you have occasion to contact our call center:
- 11. Were call center personnel able to answer the phone promptly?
- 12. Were you offered the free Gerber baby life insurance 6 month policy?
- 13. Did you look on the WebNursery?
- 14, Didyou join GF network... "

- —- Original Message——From: Spellmeyer, Jim

Sent: Friday, May 20, 2005 3:18 PM

To: Paul, Bob Cc: Benz, Steve

Subject: RE: CCC to contact (100) COD customers we received COD Claim \$\$ on??

Bob:

Please ignore this. Steve will be following up with you and Tim

Thanks.

Jim

-----Original Message—--

From: Benz, Steve

**Sent: Friday**, May **20,2005** 2:41 PM

To: Paul, Bob; Spellmeyer, Jim

Subject: CCC to contact (100) COD customers we received COD Claim \$\$ on??

**FYI Bob/Jim**. Max wants us to have the CCC conduct a "telephone test", whereby the CCC contacts up to 100 of our customers, who were COD customers. These would be customers who requested their pkg be shipped via COD, however.....we ended up getting paid a "COD Claim"

\$\$ from the USPS. The reason the USPS gives us on most of these are "NO COD REMITTANCE RECEIVED", which, according to the USPS, means "in doing research, the USPS has no record of attempted delivery or payment and ar assuming the pkg is lost or damaged, so they are paying the claim".

I had the CCC conduct this test previously, and they were only able to contact less than 15% of the customers (because usually the phone number was not valid, or no phone number).

Attached are about (300) customers we'd like the CCC to call each one. Purpose is to find out whether that Customer Received the Pkg, paid for the pkg, or never received a request for delivery from the USPS.

Could you pls have the CCC conduct this test? Pls let me know, thx

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							PAYMENT EXPLANATION	
COD NU	MBER	DATE SHIPPED	CUST NUMBER	USPS CHK #	CHK DATE	CHK AMT	PATMENTEAPLANATION	
M04917	75908	11/12/2004	5728855	303867834	5/5/2005	\$63.72	No COD remittance received	
M05167	75098	11/24/2004	5654204	303867873	5/5/2005	\$37.22	No COD remittance received	
M05167		11/24/2004	5794256	303867875	5/5/2005	\$50.13	No COD remittance received  No COD remittance received	<del>                                     </del>
M0491		11/22/2004	5776508	303867881	5/5/2005 5/5/2005	\$62.86 \$83.79	No COD remittance received	<del> </del> -
M0491		11/23/2004 11/23/2004	5784645 5782101	303867880 303867879	5/5/2005	\$43.18	No COD remittance received	
M0491: M0516		11/23/2004	5787943	303867878	5/5/2005	\$45.05	No COD remittance received	
M0516		11/23/2004	5791873	303867877	5/5/2005	\$76.97	No COD remittance received	<u> </u>
M0516		11/23/2004	5732787	303867876	5/5/2005	\$36.85	No COD remittance received	₩-
M0516	75042	11/24/2004	5800866	303867874	5/5/2005	\$57.54	No COD remittance received  No COD remittance received	<del> </del>
M0516		11/24/2004	5768929	303867872	5/5/2005	\$92.41 \$57.84	No COD remittance received	<del>                                     </del>
M0516		11/29/2004	5804189	303867871 303867870	5/5/2005 5/5/2005	\$58.00	No COD remittance received	
M0516		11/29/2005 11/29/2004	5803036 5714647	303867869	5/5/2005	\$53.72	No COD remittance received	
M0516		11/29/2004	5829008	303867868	5/5/2005	\$56.96	No COD remittance received	
M0516		11/29/2004	5758801	303867867	5/5/2005	\$74.32	No COD remittance received	<del>↓</del>
M0516		11/29/2004	5816485	303867866	5/5/2005	\$57.45	No COD remittance received	
M0516	75842	11/29/2004	5815969	303867865	5/5/2005	\$71.35	No COD remittance received  No COD remittance received	┼─-
M0516		11/29/2004	5691719	303867864	5/5/2005	\$58.66 \$42.53	No COD remittance received	$\top$
M0491		11/15/2004	5734456	303867863	5/5/2005 5/5/2005	\$57.39	No COD remittance received	
M0482		11/16/2004	5741409 5744839	303867861	5/5/2005	\$45.44	No COD remittance received	
M0482 M0482		11/16/2004	5747115	303867860	5/5/2005	\$36.77	No COD remittance received	4
	44665	11/16/2004	5514718	303867859	5/5/2005	\$46.60	No COD remittance received	
	44679	11/16/2004	5738720	303867858	5/5/2005	\$41.12	No COD remittance received	
	76174	11/16/2004	5674858	303867857	5/5/2005	\$57.25	No COD remittance received  No COD remittance received	<del> </del>
	244042	11/17/2004	5753134	303867856	5/5/2005	\$63.24 \$62.92	No COD remittance received	1
	244769	11/17/2004	5675642	303867855 303867854	5/5/2005	\$65.95	No COD remittance received	
	244804	11/17/2004	4352225 5688714	303867853	5/5/2005	\$26.29	No COD remittance received	
	244836 244871	11/17/2004	4553739	303867852	5/5/2005	\$37.90	No COD remittance received	
	244211	11/18/2004	5758163	303867850	5/5/2005	\$63.72	No COD remittance received	
<del></del>	244270	11/18/2004	5674802	303867849	5/5/5005	\$41.12	No COD remittance received  No COD remittance received	+
	675909	11/29/2004	5634198	303867899	5/5/2005	\$73.42 \$130.94	No COD remittance received	+
	707917	11/30/2004	5767483 5597201	303867898 303867897	5/5/2005 5/5/2005	\$57.04	No COD remittance received	
	675302 675315	11/30/2004	5832233	303867896	5/5/2005	\$44.61	No COD remittance received	
	675952	11/30/2004	3472020	303867895	5/5/2005	\$57 10	No COD remittance received	
	176604	11/15/2004	5725133	303867828	5/5/2005	\$26.36	No COD remittance received	
	176655	11/15/2004	5731696	303867827	5/5/2005	\$36.92	No COD remittance received	+
1 M049	176665	11/15/2004	5374165	303867826	5/5/2005	\$57.39	No COD remittance received  No COD remittance received	+-
	176722	11/15/2004	5722492	303867825		\$49.53 \$71.17	No COD remittance received	
	176762	11/15/2004	5733627	303867824	<del></del>	\$104.63	No COD remittance received	
<del>-</del>	175858	11/12/2004	5719054 5698704	303867835 303867848		\$148.05	No COD remittance received	
242.2	090312 245057	11/12/2004	5703829	303867847	-	\$44.85	No COD remittance received	
	348072	9/29/2004	5410924	303856861		\$22.67	No COD remittance received	<del></del>
	343015		5280966	303856979		\$5.90	No COD remittance received No COD remittance received	+-
9 MQ49	701670	9/13/2004	5257911	303856776		\$20.83	No COD remittance received	_
o M049	187345	10/28/2004	5436741	303867965		\$57.77 \$81.35	No COD remittance received	
	174436		3883925 5630971	303867963 303867846		\$61.81	No COD remittance received	
	244499		56309/1	303867845		\$41.56	No COD remittance received	
	244935 174983		5628635	303867844		\$42.32	No COD remittance received	
	134769		5602442	303867843		\$57.39	No COD remittance received	+
	135382		5709368	303867842		\$42.54	No COD remittance received No COD remittance received	<del>-   -</del>
7 M049	175690	11/10/2004	5605983	303867841		\$48.83	No COD remittance received	$\top$
	176229		5333820	303867840		\$65.95 \$44.33	No COD remittance received	
4-4-	176259		5663659	303867839		\$72.07	No COD remittance received	
	176333		5715966 5223189	303867838 303867837		\$62.02	No COD remittance received	
	176427		5710363	303867836		\$85.22	No COD remittance received	
	91758 <u>40</u> 9176109		5717841	303867831		\$107.45	No COD remittance received	-
	176541		5715099	303867830		\$67.11	No COD remittance received	<del>-  -</del>
	176161		5729753	303867829	5/5/2005	\$104.16	No COD remittance received  No COD remittance received	
	186965		5625505	303867933		\$50.25	No COD remittance received  No COD remittance received	+-
7 M049	187127		5613264	303867932		\$109.61 \$38.20	No COD remittance received	
	187343		5530497	303867931		\$45.91	No COD remittance received	
59 MO49	9166874	10/29/2004	5547321	303867930	, <u>Jan 2003</u>	\$42.75	No COD remittance received	,

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	COD NUMBER		CUST NUMBER		CHK DATE	CPK AMT	PAYMENT EXPLANATION :	
71	M049176078	11/12/2004	5650253	303867832	5/5/2005	\$125.07 \$105.23	No COD remittance received  No COD remittance received	
72	M049187758	10/29/2004 11/1/2004	5628791 5594649	303867964 303867962	5/5/2005 5/5/2005	\$57.83	No COD remittance received	
73	M049175009 M049175020	11/1/2004	5638061	303867961	5/5/2005	\$78.39	No COD remittance received	
75	M049175026	11/1/2004	5596179	303867960	5/5/2005	\$76.65	No COD remittance received	ļ
76	M049175046	11/1/2004	5434378	303867959	5/5/2005	\$50.71	No COD remittance received	
77	M049175057	11/1/2004	5637625	303867958	5/5/2005	\$56.28	No COD remittance received	<del> </del>
78	M049187892	11/1/2004	5639119	303867957	5/5/2005 5/5/2005	\$78.44 \$42.43	No COD remittance received No COD remittance received	<del> </del>
79	M049186943 M049175250	10/28/2004	5628386 5648254	303867956 303867955	5/5/2005	\$44.84	No COD remittance received	1
81	M049174750	11/3/2004	5658880	303867954	5/5/2005	\$49.61	No COD remittance received	
82	M049174758	11/3/2004	5660391	303867953	5/5/2005	\$63.25	No COD remittance received	<u> </u>
83	M049174791	11/3/2004	5658548	303867952	5/5/2006	\$78.00	No COD remittance received	<del> </del>
84	M049174806	11/3/2004	5619002	303867951	5/5/2005	\$77.04	No COD remittance received No COD remittance received	<del> </del>
85	M049175550	11/3/2004	5862793	303867950	5/5/2005 5/5/2005	\$110.93 \$3£.83	No COD remittance received	1
86	M049176574	11/3/2004	5644642 5620538	303867949 303867948	5/5/2005	\$102.15	No COD remittance received	
67	M049175587 M049090748	11/3/2004	5662709	303867947	5/5/2005	\$62.45	No COD remittance received	
88		11/4/2004	5670111	303867946	5/5/2005	\$73.15	No COD remittance received	
90		10/28/2004	5560178	303867936	5/5/2005	\$57.68	No COD remittance received	<del> </del>
91		10/28/2004	5626996	303867935	5/5/2005	\$63.24	No COD remittance received	<del> </del>
92		10/28/2004	5629739	303867934	5/5/2005	\$78.01 \$72.41	No COD remittance received  No COD remittance received	
93		11/19/2004	7716-119740	30386791 <u>0</u> 303867909	5/5/2005 5/5/2005	\$68.14	No COD remittance received	
94		11/19/2004	0684-026250	303867908	5/5/2005	\$74.07	No COD remittance received	
96		11/19/2004	5235-061270	303867907	5/5/2005	\$57.83	No COD remittance received	
97		11/22/2004	7633-289160	303867906	5/5/2005	\$36.26	No COD remittance received	<del></del>
98	M049186324	11/29/2004	5281-058520	303867939	5/5/2005	\$50.12	No COD remittance received No COD remittance received	
90		11/23/2004	5229-264460	303867928	5/5/2005	\$36.65 \$54.07	No COD remittance received	
100		11/22/2004	1478-249550 7890-282790	303867904 303867903	5/5/2005	\$23.94	No COD remittance received	
101		11/22/2004	7098-082010	303867892	5/5/2005	\$72.41	No COD remittance received	
103		11/30/2004	1502-177780	303867882	5/5/2005	\$42.53	No COD remittance received	
10	· <del></del>	11/30/2004	1111-290300	303867913	5/5/2005	\$42.38	No COD remittance received	
10		11/19/2004	5880-203090	303867912	5/5/2005	\$26.07 \$45.26	No COD remittance received  No COD remittance received	+
10	<del></del>	11/19/2004	2601-028660	303867911 303867940	5/5/2005	\$65.22	No COD remittance received	
10	<del></del>	11/29/2004	0807-203421 2283-263460	303867938	5/5/2005	\$56.51	No COD remittance received	
10		11/29/2004	2648-220600	303867914	5/5/2005	\$44.73	No COD remittance received	
11		11/22/2004	2893-310730	303867902	5/5/2005	\$36.74	No COD remittance received	
11		11/30/2004	0802-084470	303867894	5/5/2005	\$44.79	No COD remittance received  No COD remittance received	
11		11/22/2004	2491-000090	303867900	5/5/2005	\$26.43 \$57.83	No COD remittance received	
11			7625-229090	303867901 303867905	5/5/2005 5/5/2005	\$16.50	No COD remittance received	
11	<del></del>		7313-060980 4443-274070	303867887	5/5/2005	\$26.43	No COD remittance received	
11		<del></del>	0882-251060	303867886		\$36.65	No COD remittance received	
11			0958-205380	303867883	5/5/2005	\$:01.13	No COD remittance received	<del></del>
11		11/30/2004	7898-264690	303867884		\$41.59	No COD remittance received No COD remittance received	-
11	<del></del>		7440-171490	303867885		\$49.66 \$56.51	No COD remittance received	
12			8303-070830 6165-185960	303867890 303867915		\$57.25	No COD remittance received	
12			7323-850060	305867889		\$36.84	No COD remittance received	
12		<del></del>	5030-198490	306867888		\$104.46	No COD remittance received	
12			0937-035270	303867917		\$40.87	No COD remittance received No COD remittance received	<del></del>
12			4130-187730	303867916		\$45.49	No COD remittance received	_
12			6277-257360	303867918		\$62.13 \$36.26	No COD remittance received	
12			0309-207580 0786-163070	303867926 303867925		\$101.13	No COD remittance received	
12		<del></del>	1478-249600	303857924		\$41.25	No COD remittance received	<del></del>
13			0850-279920	303867923		\$32.54	No COD remittance received	<del></del>
13		<del></del>	1136-217680	303867922		\$26.23	No COD remittance received  No COD remittance received	
13		11/24/2005	5281-058420	303867921		\$79,23	No COD remittance received	
13			8885-080020	303867920		\$41.69 \$56.51	No COD remittance received	
13	<del></del>		4119-160430 7185-061210	303867919 303867927		\$74.07	No COD remittance received	
15			7440-171090	303856953		\$21.62	No COD remittance received	
15			3385-314280	303856962		\$20.83	No COD remittance received	<del>-  </del>
	MO49127168		4174-312030	303867929	5/5/2005	\$75.47	No COD remittance received	
_	MO48886619		5613-057730	303856934		\$21.52	No COD remittance received  No COD remittance received	
1	o M049141180	· · · · · · · · · · · · · · · · · · ·	3134-296060	303856916		\$21.52	No COD remittance received	
14	M049145197	10/18/2004	7898-263850	303856849	4/28/2005	\$22.21	110 DOD (SHIPLING) (SOUTH	

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		Contraction	OUGT NUMBER	HERE CHY #	CHK DATE	CHK AMT	PAYMENT EX	PLANATION		
	M048273838	10/12/2004	7623-140560	USPS CHK # 303856826	4/28/2005	\$20.83	No COD remitta			
143	M049186977	10/28/2004	1478-248450	303857142	4/28/2005	\$17,13	Article not			
144	M049187074	10/28/2004	0850-256030	303857144	4/28/2005	\$21.71 \$21.52	Article not No COD remitta			
145	M049190445	10/22/2004 8/24/2004	1109-213100 7663-032030	303856933 303630660	4/28/2005 1/26/2005	\$40.07	No COD remitta			
148	M048884310 M049170148	8/27/2004	0421-070120	303630223	1/26/2005	\$43.97	No COD remitta			
148	M049093250	8/30/2004	0781-236910	303630220	1/26/2005	\$65.08	No COD remitt			
149	M049094216	8/31/2004	5325-241220	303630208	1/26/2005	\$98.63 \$60.93	No COD remitt			<del></del>
150	M04917036D	8/26/2004 8/23/2004	5229-310300 3433-074050	303630190 303630674	1/26/2005	\$65.80	No COD remitt			
151	M048883369 M048883839	8/25/2004	1035-100240	303630654	1/26/2005	\$72.26	No COD remitt			
153	M043346943	8/17/2004	3420-050150	303628095	1/26/2005	\$23.89	No COD remitt		<del></del> -	
154	M043347352	8/18/2004	6395-233390	303628099	1/26/2005	\$41.70 \$97.25	No COD remitt			
155	M048790078	9/15/2004	8213-310410 4511-097440	303630200 303630247	1/26/2005	\$35.97	No COD remitt			
158	M048791756 M049189529	9/8/2004	6165-199900	303630296	1/26/2005	\$55.96	No COD remitt		$\longrightarrow$	
157	M049189495	9/13/2004	6003-043031	303630297	1/26/2005	\$61.64	No COD remitt			
159	M048790071	9/16/2005	2283-256551	303629920	1/25/2005	\$55.72 \$23.94	No COD remits  No COD remits			
160	M049177446	9/21/2004	7273-335791 2393-217090	303629895 303630235	1/26/2005	\$35.30		ance received		
161	M048302656 M043211313	9/2/2004 8/13/2004	5013159	303628059	1/26/2005	\$35.78	No COD remit	ance received		
163	M048862188	6/21/2004	4745054	303628543	1/26/2005	\$110.75		tance received		
164	M048862041	5/18/2004	4551996	303628540	1/26/2005	\$83.89 \$42.46		tance received		
165	M048885522 M048829894	8/12/2004	3250107 5001733	303627986 303627985	1/26/2005	\$35.87		tance received		
166	M048818051	6/11/2004	4764115	303628545	1/26/2005	\$64.40		tance received		
168	M048787970	6/29/2004	4839853	303627769	1/26/2005	\$50.25		t delivered		
169		8/13/2004	5162646	303628056	1/26/2005	\$43.04		tance received		
170		8/13/2004 8/13/2004	5149261 4575909	303628057	1/26/2005	\$40.50		tance received		
171		8/15/2004	5168770	303628060	1/26/2005	\$59.83		tance received		
173		8/16/2004	4969161	303628062	1/26/2005	\$43.74		tance received		<del></del>
174	<del></del>	8/19/2004	5135997	303628066	1/26/2005	\$62.44		tance received		
175	M048814096	8/19/2004 8/16/2004	5108657 4844647	303628064 303628061	1/26/2005	\$169.49		tance received		
176			5132378	303628063	1/26/2005	\$27.71		tance received		├
178			5202594	303828065	1/26/2005	\$42.79		tance received		├
179			5182966	303628067 303628068	1/26/2005	\$14.92		ttance received		
180			5186939 5169276	303628071	1/26/2005	\$61.03		ttance received		<b></b>
182			5110288	303628072		\$154.44		ttance received		<del> </del>
183	M048787553		5196530	303628069		\$75.02		ttance received		<del>                                     </del>
184			5194760 5101708	303628070 303630646		\$37.68		ttance received		
185			5256805	303630647		\$99.92		ttance received		<del> </del>
18			5250871	303630648	1/26/2005	\$111.20	No COD rem	ttance received ttance received		<del> </del> -
188		8/30/2004	5202391	303630642		\$35.89	No COD rem	ttance received		<del>                                     </del>
189			5255081	303630643 303630644		\$41.37	No COD rem	ttance received		
190			5154845 5254686	303630645	<del></del>	\$25.66	No COD rem	ttance received	<del> </del>	<del> </del>
193			5257092	303630640	1/26/2005	\$99.82	No COD rem	ttance received	<b>—</b> —	+
190	3 M049173196	8/30/2004	5203113	303630641			No COD rem	ttance received		<del></del>
19	**********		5266525 4404901	303630634			No COD rem	ittance received		
19			5270316	303630636		\$61.26	No COD rem	ittance received		+
19			5267971	303630637	1/26/2005		No COD rem	Ittance received	<del> </del>	+
19	8 M049094078	8/31/2004	5232847	303630638				ittance received		
19			5002300 5266957	303630633			No COD rem	ittance received		$oxed{\Box}$
20			5062327	30363063		\$41.96	No COD rem	ittance received	<del> </del>	<del> </del>
20			5251856	303630622	1/26/2005		No COD rem	ittance received ittance received	<del> </del>	+
20	4174040000	5 6/17/2004	4270094	30352854			No COD rem	ittance received		
20			4810687	30362854			No COD rem	ittance received		
20			4854214 4791747	30362854 30362854			No COD rem	ittance received	ļ	<del> </del>
_ 20			4685413	30362854		\$83.32	No COD rem	ittance received	<del> </del>	+
20			2406-275340	30363066	2 1/26/2005		No COD rem	ittance received	<del> </del>	+-
	9 M04321201	5 8/13/2004	7028-157190				No COD rem	ittance received	t	工
	M04909385		8233-059110 0225-316480				No COD rem	ittance received		
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9/29/2006

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21		9/15/2004	3385-290410	303630281	1/26/2005	\$70.09		ittance received		
210		9/8/2004	8423-217880	303630280	1/26/2005	\$69.93		Ittance received	<del></del>	
21		9/9/2004	0807-185292	303630279	1/26/2005	\$110.26		Ittance received	<del></del>	
21		9/9/2004	4913-172390 6710-244910	303630278 303630276	1/26/2005	\$19.77 \$97.88		ittance received		
21		9/13/2004	2314-272670	303630294	1/26/2005	\$23.77		ittance received		
22	400.000.000	9/14/2004	4195-116390	303630285	1/26/2005	\$70.94		ittance received		
22		9/14/2004	2283-260170	303630284	1/26/2005	\$10.34		Ittance received	-	
22		9/14/2004	1628-263650	303630282	1/26/2005	\$34.74 \$49.04		ittance received		
22		9/14/2004 8/18/2004	2283-260180 3587-176350	303630283 303628098	1/26/2005	\$65.19		ittance received		
22		8/18/2004	5330-096240	303628097	1/26/2005	\$98.89	No COD rem	ittance received		
22		8/17/2004	3420-050490	303628096	1/26/2005	\$61.17		ittance received		
22		8/17/2004	2406-274140	303628094	1/26/2005	\$61.64		littance received		
22		8/16/2004	7077-033190 5403-184430	303628093 303628092	1/26/2005	\$47.34 \$60.84		ittance received		
23		8/13/2004	0458-175180	303628088	1/26/2005	\$48.50		rittance received		
2		8/12/2004	5873-277050	303628089	1/26/2005	\$35.68		nittance received		
2		8/11/2004	7386-181000	303628087	1/26/2005	\$54.68		hittance received		<u></u> .
2:		8/18/2004	0801-239090	303628100	1/25/2005	\$72.13 \$86.10		hittance received		
_	35 M043347282 36 M048814023	8/18/2004	6643-318040 6831-138660	303628101 303628106	1/26/2005	\$48.50		nittance received		
2		8/19/2004	4240-018450	303628105	1/26/2005	\$98.34		nittance received		
_	38 M048813984	8/19/2004	7395-243120	303628107	1/26/2005	\$25.53		nittance received		<del></del>
	39 M048787670	8/19/2004	7170-238410	303628108	1/26/2005	\$72.51		nittance received		<del></del>
-	40 M043203928	8/9/2004	3856-133850	303628082	1/26/20005	\$67.03 \$62.18		nittance received	_	i
	41 M043204459 42 M048801651	8/9/2004	2130-183080 6649-208880	303628073	1/26/2005	\$64.90		nittance received		
_	43 M043203920	8/6/2004	0189-261940	303628076	1/26/2005	\$34.83		nittance received		
1	44 M043204282	8/10/2004	0807-186270	303628086	1/26/2005	\$54.70		nittance received		<del></del>
	45 M043204702	8/10/2004	1111-187240	303628085	1/26/2005	\$71.58 \$51.66		nittance received   nittance received		<del></del>
_	46 M043204755 47 M049170063	8/10/2004	7137-268390 6003-098760	303628084	1/26/2005	\$35.87		nittance received		
_	47 M049170063 48 M049093959	8/30/2004	4749-151350	303630216	1/26/2005	\$47.52	No COD rer	nittance received		<u> </u>
_	49 M048883500	8/23/2004	0802-076210	303630668	1/26/2005	\$59.83		nittance received		
	50 M049094203		4688-008320	303630209	1/26/2005	\$66.78 \$36.45		nittance received		<del> </del>
	51 M048883344		8073-112300 6003-096531	303630665 303630286		\$61,64		nittance received		
	52 M048789123 53 M048792300		5281-054140	303630252		\$50.13		mittance received		
	54 M048792203		7185-060350	303630253	1/26/2005	\$30.25		mittance received		<u> </u>
	55 M048792188	9/7/2004	5873-277610	303630255		\$79.63		mittance received		<del> </del>
	256 M048792132		7170-240880	303630256		\$71.95 \$54.99		mittance received		
	257 MO48792079	<del></del>	0611-334450 6183-288110	303630257		\$43.27		mittance received		
<u> </u>	258 M048791588 259 M049189575		5880/215480	303630291		\$35.58	No COD rei	mittance received		
	260 M049190249		8010-042680	303630289		\$66.56		mittance received		<del> </del>
	261 M048791661	9/8/2004	3699-116770	303630248		\$70.66		mittance received	<u> </u>	+
	262 M048791621		5825-192670	303630249 303630250		\$42.86 \$130.46	No COD re	mittance received		
_	263 M048792348 264 M048791516		8150-025180 3690-260500	303630260		\$29.29	No COD re	mittance received		
	264 M048791516 265 M049173800		2730-097860	303629903	1/26/2005	\$48.68		mittance received		<b></b>
_	266 M049173706	9/20/2004	4228-176940	303629904		\$110.95	No COD re	mittance received mittance received		+
	267 M04917361E		6693-020470	303629906		\$55.90 \$70.29	No COD re	mittance received		<u> </u>
_	268 M049174278		2149-264602 0449-146650	303629902 303629900		\$35.82	No COD re	mittance received		
ļ	269 M049176929 270 M049177107		2255-325260	303629898		\$34.36	No COD ne	mittance received		
- 1-	271 M049177244		3770-176580	303629911	1/26/2005	\$62.93	_	not delivered	<del> </del>	+
1	272 M049174102	9/17/2004	7984-353000	303629913		\$43.65		mittance received mittance received	-	-
<b>⊢</b>	273 M049173402		5593-014100	303629916		\$56.71 \$54.55		not delivered	<del> </del>	
	274 M049689746		8090-208800	303629907 303629908		\$56.73		not delivered		
	275 M049689724 276 M049177278		5145-112510 3430-296490	303629909		\$74.62		not delivered		
	276 M049177278 277 M049177254		6003-100190	303629910		\$36.93		not delivered	<del> </del>	+-
}	278 M04917765	9/22/2004	7887-016000	303629890		\$59.83	No COD re	mittance received	<del> </del>	+
Ó	279 M04880395		0225-031460	303630198		\$107.73 \$36.07		mittance received		
	80 M048792192		1390-266210 2213-339780	303630254		\$34.74		mittance received		
4	281 M049190120 282 M04917389	_	1947-086430	303629917		\$59.83	No COD re	mittance received		<b>_</b>
$\vdash$	283 M04917773		4413-055930	303629888		\$43.62	No COD re	mittance received	L	

		AMD)	indeven.	WE 1915GH	Es ind	F. (6/6)		
	COD NUMBER	DATE SHIPPED	CUST NUMBER	USPS CHK #	CHK DATE	CHK AMT	PAYMENT EXPLANATION	
<u>)</u> :	M049177465	9/21/2004	0184-112520	303629894	1/26/2005	\$39.12 \$16,506,54	No COD remittance received	

From:

Benz, Steve [sbenz@GrowingFamily.com]

Sent:

Monday, May 23,2005 10:49 AM

To:

Spellrneyer, Jim

Subject: RE: Follow-up on USPS underpaid \$ COD Claim checks to GF

#### FYI Jim,

- I called Tim and left a vm explaining Max wanted the CCC to contact about 100 customers whom we received a COD Claim payment from the P.O. on, and that you/I wanted to be involved in creating the script and in listening in on some of these conversations. Also listed your possible script ideas.

• I sent Tim/Ronno an email about this containing the file of customer names.

Am awaiting his response.

-----Original Message — From: Spellmeyer, Jim

Sent: Monday, May 23,2005 9:26 AM To: Spellmeyer, Jim; Benz, Steve

Subjeb: RE: Follow-up on USPS underpaid \$ COD Claim check; to GF

Steve:

Anything new an this?

I haven't seen anything since your Fri 5/20/2005 3:18 PM e-mail which was, as we discussed, a very different approach.

Jim

----Original Message----From: Spellmeyer, Jim

Sent: Monday, May 16,2005 12:33 PM

To: Benz, Steve

Subject: RE: Follow-up on USPS underpaid \$ COD Claim checks to GF

I agree with bath paints. The script below was meant just as a starting point for discussion.

Con you discuss the issue with them and then arrange a meeting?

Thanks.

Jim

----Original Message ----

From: Benz, Steve

Sent: Monday, May 16, 2005 12:26 PM

To: Spellrneyer, Jim

Subject: RE: Follow-up on USPS underpaid \$ COD Claim checks to GF

Jim, couple points:

- I recommend CCC develop the script, and then we review it and try to

change as we believe necessary. (Isay this, because this is the *CCC's* area of expertise, etc).

- Appears the most critical success factor is getting a COD customer on the phone......(this seems to be very very difficult). thx

—-Original Message-----From: Spellmeyer, Jim

Sent: Monday, May 16, 2005 11:32 AM

To: Benz, Steve

Subject: RE: Follow-up on USPS underpaid\$ COD Claim checks to GF

Lets work on the script and discuss it before we start.

I'm not a huge fan of meetings generally. but this may be one that's worth hoving.

Then could we **do**, say, **10** to see **if** the script is getting what we need?

I think it would be really interesting to listen to some of the calls.

After **10** we con analyze the results ond either improve the script or **junk** the effort **if** it seems worthless.

#### Thanks.

----Original Message---From: Benz, Steve

Sent: Monday, May 16,2005 10:24 AM

To: Spellmeyer, Jim Cc: Barnett, Max

Subject: RE: Follow-up on USPS underpaid \$ COD Claim check to GF

Jim, will have the zips added to this file listing. Will have the CCC call and get 100 COD customers on the phone. thx **(p.s.** we have tested this in the past, and were only able to obtain an answer from about 15% of COD customers - reason: **many** times there was no phone number or **email** listed, or wrong phone number. However, this time, will have the CCC get 100 COD customers on the phone).

---Original Message--From: Spellmeyer, Jim

Sent: Friday, May 13, 2005 5:53 PM

To: Benz, Steve Cc: **Barnett,** Max

**Subjeb:** Follow-up on USPS underpaid \$ COD Claim checks to GF

Steve:

Please ask someone to put the Addressee's ZIP on these files

Also, let's discuss the script ond have someone call a sampling of the "NO COO REMITTANCE RECEIVED" and do a "QC audit" to find out, among other things, how the **USPS** is doing a quality job of delivering packages. collecting money and getting it to us.

My first draft / ideos:

chat up the Mom: Congrot's on the birth of \_\_\_\_ at \_\_\_\_, I'm from GFI in St. Charles, MO and we do the official newborn baby photos ot \_\_\_\_\_.

- 1. Do you remember hoving a baby picture taken in the hospital?
- 2. Do you remember whether it was token by one of our employees or o nurse in the hospitol?
- Was the person knowledgeable, courteous, patient, etc... (rating 1to 5)
- **4.** Did you place on order with the photographer? In the hospitol? by Moil?
- 5. When did you receive the pictures?
- 6. Did they come by UPS, Postal service, FedEx?
- 7. Were they all OK, everything you ordered there, etc.?
- 8. How did you pay for the pictures?
- 9. Did you like the quality of the pictures?
- 10. Did you have occasion to contact our call center:
- 11. Were call center personnelable to answer the phone promptly?
- 12. Were you offered the free Gerber boby life insurance 6 month policy?
- 13. Did you look on the WebNursery?
- 14. Did you join GF network....

Thank you...

-----Original Message—— From: Benz, Steve

Sent: Wednesday, May 11,2005 2:22 PM

To: Paul, Bob

Cc: Spellmeyer, Jim; Bamett, Max

Subject: Excel file of recent < requested \$ COD Claim checks to

GF

FYI Bob/Jim, attached is a spreadsheet detailing all the COD Claims checks we received from the

USPS this week, which were significantly lower than the amount of the claim we requested. One file is Legacy and the other are the SAP checks. As you will see, in total, we received about 32% of the total \$\$ we requested.

## RESPONSES OF GROWING FAMILY, INC. TO USPS FIRST INTERROGATORIESTO GROWING FAMILY, INC. WITNESS PAUL (USPS/GF-T1-1-5)

**USPS/GF-T1-4**. Please refer to page 16, lines 3-5, of your testimony, where you refer to a "very low' value of service" for COD service. Please confirm that this low value of service applies only to those pieces for which claims are filed, and the Postal Service either denies the claim or pays at less than the amount to be collected. If you do not confirm, please explain why not.

#### **RESPONSE:**

I can confirm that, in my testimony, I was focusing on the Postal Service's failure to follow its own policy when it comes to reimbursing Growing Family. But I cannot make the leap suggested in the question. Because of the change in the Postal Service's reimbursement practice and its suddenly charging us based on one value but reimbursing us on another value, the overall value of COD service to Growing Family has diminished. If we were mailing checks by First-class mail, and 34% of them were lost by the Postal Service, it would be foolish to state that the value of First-Class mail is high–except for the lost pieces,

## RESPONSES OF GROWING FAMILY, INC. TO USPS FIRST INTERROGATORIES TO GROWING FAMILY, INC. WITNESS PAUL (USPS/GF-T1-1-5)

**USPS/GF-T1-5**. Please refer to page 16, lines 5-8, of your testimony (proposing that the appropriate COD fee for each particular mailing be detennined based on the reproduction cost of the item mailed, rather than the amount contents of Growing Family COD mailings). How does basing the COD fee on the reproduction cost for the item mailed comply with criterion 7 of the ratemaking criteria, which specifies consideration of the "simplicity of structure" for the fee schedule?

#### **RESPONSE:**

I assume from the question that you have misinterpretedmy testimony. When I stated that, if we are to be reimbursed on the basis of the reproduction cost of the product (as we have been despite the new policy calling for various levels of reimbursement), then the fee should be based upon the reproduction cost, not the amount to be collected from the recipient. Idid not mean to imply that the fee should vary with every penny or dollar of reproduction cost. Rather, just as there is now a range for assessing postage based upon the greater of insurance requested or amount to be collected, I am suggesting that the rate should be based upon a range of insurance requested or reproduction cost. This approach would be no less "simple" than the present approach. It would just be a lot more fair. If our reimbursement is to be capped at reproduction cost, and the amount to be collected does not enter into the calculation of indemnify being offered.

**USPS/GF-T1-6.** Please refer to page 1, lines 10-13 of your testimony. How much longer than the minimum time required by the Domestic Mail Manual does your company wait to submit a claim?

#### **RESPONSE:**

Postal regulations require mailers to wait a minimum of 45 days from the date of mailing. We typically submit claims about 90 days after mailing, because it often takes longer than the minimum 45 days for the Postal Service to return remittances or undeliverable or refused packages to us.

USPS/GF-T1-7. Please refer to page 2, fines 4-6 of your testimony. Please provide the annual total package volume for your company, and the annual COD package volume for your company, for every year since 1995.

#### **RESPONSE:**

We are still working to locate and tabulate the data requested, some of which are rather old.

**USPS/GF-T1-8.** Please refer to page 2, lines 6-9 of your testimony. What improvements has the Postal Service made that you presume may contribute to the decline in your claim rate?

#### **RESPONSE:**

We cannot be sure. We know only that, at the time that our testimony was submitted, there had been a decline in our claim rate, although I should point out that the most recent data show a reversal of that trend.

USPSIGF-TI-9. Please refer to page 2, lines 21-23 of your testimony. Please provide any documentation Growing Family has of the referenced meetings. If you have no available documentation, please provide a description of the meetings.

#### **RESPONSE:**

Last year, as part of its administrative appeal of the new payment policy, Growing Family sought information about meeting with the Postal Service from those who may have participated in them. I am attaching the responses we received.

#### September **24,2005**

To: Bob Paul

From: Bob McGee

Subject: USPS/COD Claims Process

Bob,

I am hopeful that the information I share in this document will assist both Growing Family and the USPS in determining a rightful and win-win solution.

I believe it would be worthwhile to review the history behind the relationship between both parties. As you know my staff and I dedicated a great deal of time over several years building toward serving our customers (new moms) and not focusing on what was best for each of our companies. It required a significant commitment from both parties. The USPS was encouraged to operate within the spirit of the domestic mail manual and we had to become more innovative in the pursuit of excellent service.

It all really started in late **1882** when first foto merged with the Arnold group from California. The operation was consolidated in St. Charles and we suddenly changed from primarily daily delivery packages and mail on approval programs to a major addition of COD packages. There was a time when we were more than 70% COD. This was when I first joined the company and we had a number of challenges in front of us relative to quality, service, and process. In those days varying department leaders dealt with the postal service depending on there specific needs and priorities. Generally however, AI Bacher was our go to guy for postal issues. Larry

Kirchner, Shirley Swope, and Al were developing our new COD packaging and printing process. At that time Jerry Ghigletti was our plant mgr. and I was the new production mgr.

In March of **1984** Jerry left the company for a new position in Florida and I was offered the opportunity to manage the plant. That is when I immediately changed the plant 25 identify to Lab 25 as well as our affiliate labs. The 80's were filled with growth through merger and acquisitions. Our volume of packages going to the postal service was growing pretty rapidly. Somewhere in that timeframe it became obvious that the lab was now the heaviest user and had the most to gain with a coordinated effort and improved relationship with the USPS. I basically took up the charge on behalf of the company and began a series of meetings with the then Postmaster of St. Charles Vitalis Reed and his second in command who's name escapes me. Through these efforts we discovered the loss of service that we were incurring as a result of truck schedules, COD cancellation at the post office, and a less than effective method of auditing the overall process. 'The bottom-line is that customers were not being serviced properly and something needed to be done quickly.

Once we established the relationship with St. Charles and then having representatives from the downtown office calling on us and assisting in the overall effort things started moving in a positive direction.

After much more research and challenging all involved to step out of the box to come up with new and improved service and tracking methods, came the closed loop procedures of utilizing the airport as our distribution point and St. Charles agreed to place a postal clerk in our lab to audit and cancel our COD's. IT developed software to create a COD manifest that was

approved by USPS and signed off on everyday by the postal clerk at our location. We then sorted both our COD and prepaid packages into ADC (air distributing centers) with scan able barcodes that would be read at the airport and sent to the appropriate planes for destination airports around the country. In addition we were periodically audited by postal inspectors that included reviewing our process, software, cod manifest, and testing our package weights. Once the packages were finished for the day, the ADC tubs were sealed put in APMC's, rolled onto a dedicated truck and then sealed closed by our official postal clerk ready to be taken to the airport.

In conjunction with the outbound system, software was produced by IT that would track our return packages. As a part of this process, there was an aging schedule that would let us know if there are packages not delivered and not returned. Those packages are the one's we would file a claim on. I don't remember the exact timeframe, but I know it was more than adequate to cover any potential delays. It is worth noting that at the time we established the closed loop system with the airport, that we did not request a reduction in the COD fee although one was certainly justified, **We** were more committed to service to our moms. In that COD fee included insurance. Therefore when we filed a claim it was for the full value of the package. It is my recollection that the post office also had software that tracked the returns as well.

Through the 90's our package output continued to grow. I know our sales and marketing staff was working hard toward moving our package programs toward more prepaid orders. 1 know COD percentages were dropping. Without everyone's efforts from top to bottom the issues surrounding COD claims would be a much bigger and complex problem for our company and the postal service.

There are many more pieces to this huge undertaking particularly missing is the efforts that went into the inbound process that was developed. My staff members and I attended a number of National Postal Forums addressing these specific topics and many more. This was done at the local level at conferences in downtown St. Louis.

I am not good remembering all the names, but I do remember all of the events and hard work put in by both parties. I personally went to forums in Las Vegas, Nashville, Washington D. C. I sat down with divisional representatives discussing the future of COD with the post office. There was a time when the post office appeared to be working itself out of the COD business and customers felt that certain procedures were being enforced to discourage COD. The representatives I met with wouldn't deny any of these claims, but they felt it wasn't the direction the USPS was headed. This would have been during Carvin' Marvin's tenure as postmaster general. Sorry, I can't remember his last name?

Our position and commitment to our customers never changed. Nor did our commitment to following procedures properly with the postal service ever diminish. There was a time when we were recognized and a full campaign by the post office nominating our company as a candidate in **the** partners in progress award. While we didn't receive the actual award, we were acknowledged at the postal forum and the post office internal newsletter and were as the local St. Louis newspapers. People that work that hard to do the right thing doesn't spend their time looking for ways to take advantage of a critical vendor/partner.

I apologize that I don't remember all the player's names. At the local level I do remember Vitalis Reed postmaster St. Charles po. Don Tornitore St. Louis and regional rep. (He

played a big role in moving this thing forward in the early days) There was Charley, acct. rep.) And so many more. Once these procedures and processes were in place, staff really kept the wheels turning. Jean Bondy became our logistics mgr. and was our primary contact with USYS. She attended some of the forums with me to meet and understand how things worked. Accounting was always with us in this endeavor as well. Most of it was usually coordinated through my office, just because of the relationship development. I know that as a part of their objectives Paul M. and Dave P. got very involved with the postal service and as part of a committee organized to continue to make improvements and determine whether we were losing any claim refunds. Unfortunately, I suffered some health issues in late 1999 and wasn't there to oversee the process.

I can assure you that the company position never faltered on what we expected as payment on COQ claims. It was always the full value of the package.

If you have any further questions, please don't hesitate to contact me.

Bob McGee

### September **12,2005**

Growing Family / First Foto Mr. Bob Paul 3613 Mueller Rd. St. Charles, MO 63301

Dear Bob

Per your request I have made some notes below that reflect my recollections from my tenure at Growing Family / First Foto (GF/FF) from the years of 1989 – 2001.

During my career at GF/FF, I had the opportunity to work closely with members of the United States **Post** Office (USPS) **on** several capacities. Some of those account representatives were Charley Suluka (not sure **of** the spelling), Carol Miller and Velma Robinson. **As** I recall the majority **of** our business at that time was C.O.D. and therefore we had an ongoing situation with returned C.O.D. packages.

Discussions regarding how to handle these packages were on the agenda of several meetings with Bob McGee, I and representatives of the USPS. In later years, Paul McGeehan would play an instrumental role in trying to resolve C.O. D. packages. Some of the people that I recall attending those meetings were Don Tornatore, Roger Nienaber and Willie Mixon. Given the volume of returned packages we had it was a bonus having the Claims Processing Center in downtown St. Louis.

What I do **recall** regarding compensation for these **packages** is as follows. The USPS would remit payment **to** GF/FF for the market value of the package – less the C.O.D. fee collected. Many ideas were discussed on how to modify this agreement, but to !he best of my knowledge the agreement stood as I outlined above. Members of GF/FF's Accounting Department had the most active role in monitoring the process, **and** keeping up with which packages where unclaimed and warranted attention.

Please let me know if I can provide any clarity or additional information. Thank you

Sincerely,

Jean Bondy

Bob,

Sorry for taking so long to get back to you, but I have been swamped at work.

Anyway, I have been trying to remember names and situations since you called yesterday. but I really can't do it justice to remember very well. (It has been over two years!)

The best I can recollect is that this all started when I was trying to understand the COD process in totality. I wasn't sure how the whole process worked, but I was certain that accounting was doing 'something' wrong with the COD claims. That something wrong was the AR Mgr before me would have the clerks delete any old claims that were outstanding after a period of about 6 months.

Rose B. led me to Jean, who introduced me to the GF postal rep. A woman whose name I do not recall. Anyway, she gave me a tour of the post-office and then mapped how the COD process worked. At the end of this conversation. I started to inquire about claims specifically. We started with very general questions and I worked my way down until the rep figured out that I suspected that the USPS owed GF a lot of money. At that point, she pretty much ended the conversation I was able to get her to agree to let us review our claims on file at lhe St. Charles Post-Ofice. (We "borrowed" their files to create the file we sent to the I.T. guy I mention below).

Next, we had to start dealing with this woman's boss, a gentleman who I do not recall by name At this point. Dave P. was working with me on the project Anyway, this gentleman led us to another contact downtown. Of course, I don't recall her name. But, we also met two other individuals during this meeting: One was an I.T. guy who agreed to research a number of the historical **open** claims that I was able to get my hands on. He was to research them and give us a "ballpark" number of claims open vs. closed, etc. The other individual was Willie Mixon. It was her **dept** that the claims were 'supposed' to be resolved. She provided us no assistance.

Once we received the researched file back from this I.T. guy at the USPS. it had a percentage of claims that were still open. We then went back to downtown with this rep. and met the adjudicating team of the USPS. The adjudicating team also offered little in the way of assistance. I do recall at one point, that they all but challeriged us to go the Inspector General Mashington, D.C. Now, somewhere in my file should be Dave's letter offering a settlement and the USPS agreement to such settlement for all old claims.

Throughout all this, it was either understood or implied that we were to receive full value for our CODs. I know I had also met an African-American gentleman and woman from the St. Charles Postal branch, but I do not remember if this was before, during or after all the other meetings. I do believe the adjudicating team once tried to imply that the USPS should only pay something less that full value, but we made two arguments against such. One. what would they do for a non-business customer in this situation and second, the USPS could literally start a new profitcenter by never delivering our CODs and pocket the cash from mom and pay us the stipend for the claim.

I doubt this helps, but it is truly the best to my memory of what all happened

Good Luck.

Paul

USPS/GF-T1-10. Please refer to page 3, lines 3-4 of your testimony.

- a. What was the basis provided for the referenced subpoena?
- b. What was the outcome of the investigation by the Office of the Inspector General?
- c. What information did Growing Family provide in response to the subpoena? Please provide copies of all documents provided by Growing Family.

#### **RESPONSE:**

- a. There was **no** "basis" stated in the subpoena itself. At the time **we** received it, we had not been told why the manufacturing cost data were being sought. We had earlier received a request for information, and we provided some, explaining that if more was needed, we would cooperate and provide it. The next communication we received was the subpoena.
- b. We assume that the outcome was that the Postal Service was able to come up with an estimate of Growing Family's direct costs of reproducing a second set of photos, and **that** estimate became the basis for the payment **of** future claims.
- c. After receiving the subpoena, which sought an enormous amount of information, we discussed the matter with Special Agent McDougell and agreed to provide him detailed information about our production cost. with the understanding that he would examine that information and advise us if he needed anything else. He did not request more. The transmittal letter and the information provided to him are attached.



First Foto 1 WebNursery 1 Network 1 Professionals 1 GrowingFamily.com

October 20.2004

Mr. Mike McDougell Special Agent United States Postal Service

Mike,

Pursuant to our phone conversation earlier this month, I'm sending you the file containing our **Cost** of **Goods** Sold. During our phone conversation, you identified this **as** being the most important piece of information you **needed**, and agreed that we should supply this information now and await word **from** you on whether **any** additional information will be necessary Please let me know if it is sufficient to complete your investigation.

We are concerned, however, about the outstanding subpoena. As I was not able to reach you live-time, I have asked our attorney to make a request for an extension in time for submitting the balance of the documents that you requested in your subpoena. This request will be communicated to the USPS Inspector General's Office through attorney Vivian Mittleman.

Please let me know if the **Cost** of Goods Sold Document meets your needs. We will cooperate fully, should you require more.

Best regards,

**Bob Paul** 







F (636) 946-7148

### Growing Family.Inc. US Production Cost per COD Package

### August 2004 YTD

Suppl	lies (film, paper, etc.)		\$ 443
<b></b>	Paper Expense	0 81	
	Film Expense	023	
	Chemicals Expense	0.06	
	Package Materials	032	
	Other Production Materials	0 20	
	Hospital Supplies	1 32	
	Keepsakes (shipped with package)	1 42	
	Obsolete Materials	0 <i>0</i> 7	
Posta	age for Packages (incl. COD fee)		\$ 776
	(COD photo packages shipped to Mom)		
Labo	r Costs		\$ 21.24
	Operations Management Salaries	094	
	Cierical Labor	2.77	
	Direct Labor	2 40	
	Overtime	0 11	
	Contract/Temporary Labor	0 08	
	Bonus	0 12	
	FICA	0 47	
	Allocated Benefits	1.38	
	Misc Employee Benefits	WO	
	Photographer Labm	8.03	
	Cierical Labor	113	
	Overtime	0 <b>as</b>	
	Contract/Temporary Labor	0.06	
	Bonus	0 01	
	FICA	0 73	
	Unemployment Tax	0.22	
	Allocated Benefits	0 45	
	Misc Employee Benefits	0 02	
	Lodging	0 08	
	Meals/Entertainment	0.05	
	Mileage, Parking, Tolls	0 33	
	Auto Remai	0 02	
	Airfare	0 09	
	Money Order Fees	0 <b>02</b>	
	Auto Repairs & Maintenance	OM	
	Telephone	0 15	
	Auto Leases/Allowances	0 14	
	Taxes & Licenses	0 01	
	Administrative Postage/Delivery	OM	
	Administrative Expedited Mail	001	
	•		

	Office Supplies	0.05		
	Meeting Expenses	0.01		
	Advertising and Marketing Exp	OM		
	AV/ID Equipment & Supplies	0 03		
	Recruiting	0 16		
	Consultant/Professional Fees	0 92		
•	ital Commission (paid based on packages) Hospital Contract show \$7.80 per package shipped)		\$	7.00
Donai	ir Customar Sarviga Cost ata		\$	3.39
vehg	ir, Customer Service Cost, etc. Partner Marketing Fulfillment Expenses		•	3.37
	·	0 01		
	Lodging Inventory Change - Scrapped Material	007		
	Inventory Change - Scrapped material Inventory Change - Receipt without Order	io 02)		
	Gain/Loss Price Variances	001		
	Machinery & Equipment Repairs & VV	0 04		
	Allocated Mach & Equipment Repairs	0 39		
	NonCapitalized Equipment	0 01		
	Telephone	0 38		
	Alloc Telephone	0.05		
	Electricity	0.12		
	Building Lease	0 36		
	Mach—— & Equipment Rent	0.01		
	Auto Leases/Allowances	0 03		
	Taxes & Licenses	0 17		
	Outbnd Supplies Postage	0 46		
	Inbound Mail Postage	0.58		
	Inbound Hospital Equipment	0.12		
	Outbound Hospital Equipment	0 26		
	Administrative Postage/Delivery	0 07		
	Administrative Expedited Mail	0 08		
	Freight	0 03		
	Office Supplies	0.0		
	Advertising and Marketing Em	0 12		
	Recruiting	0.06		
Depre	eciation of Lab Equipment			4.56
_				
Per P	ackage		\$	48.37

NOTE: The above excludes Corporate Overhead.

**USPSIGF-TI** -11. Please refer to page 5, lines 5-8 of your testimony.

- a. When was the referenced "newly-announced" policy announced?
- b. Please provide all documentation which details the announcement.

### **RESPONSE:**

- a. In retrospect, perhaps the word 'announced" was imprecise, in the sense that this policy was never formally announced. Rather, we learned for the first time that it is the Postal Service's policy not make good on a personal check it lost when its witness Berkeley so stated in this case.
- b. There are no documents that we know of, other than witness Berkeley's interrogatory responses and the transcript of her cross-examination, all of which are in the Postal Service's possession.

**USPS/GF-T1-12.** Please refer to page 5, lines 9-14 of your testimony.

- a. If you assume that the Postal Service's "policy" has been in effect for a number of years, why should Growing Family be reimbursed at an amount that is in conflict with that policy, regardless of whether or not the clarification of that policy was not made until later?
- b. If Growing Family was overpaid in claims amounts because the Postal Service had not clarified the "policy," should Growing Family reimburse the Postal Service for claims overpayments?

### **RESPONSE:**

- a. It is difficult to understand and answer this question. If I assume, contrary to my belief, that the policy of reimbursing Growing Family in an amount less than we believe we are entitled to and less than the amount of indemnity for which we pay had been in effect prior to the time when it was actually implemented, or "clarified" as you prefer. Growing Family should not have been reimbursed for more than the effective policy would provide. However, had that policy been in effect prior to when it was actually implemented, Growing Family should not have had to pay COD fees based on an amount of indemnity that the Postal Service did not offer, as explained in my testimony at page 6, lines 5-9. If you are asking whether the "clarified" policy should or could have been applied retroactively, that is a legal question that was addressed in our appeal—Exhibit RP-3.
- b. Growing Family was not "overpaid" in the past. It is being underpaid now. If through administrative error in the past the Postal Service overpaid on a claim, then of course Growing Family should pay back the excessive amount. In the past, Growing Family was reimbursed at the amount to be collected, which was the value of the packages on which the claim was made and the value that formed the basis for our COD fee. Prior to the 2005 change in the Postal Service's practice, we believe that Growing Family received exactly the same treatment as all other COD customers when its claims were paid –whether large commercial customers or walk-up customers at post offices around the country. Not until the Postal Service "clarified" the new policy did the mismatch between the fee and the reimbursement arise.

**USPS/GF-T1** -13. Please refer to page 7, lines 13-16 of your testimony.

- a. Do you agree that the Postal Service will reimburse Growing Family if there is a record that the check is collected by the Postal Service, yet the Postal Service fails to mail the check? If you do not agree, please explain fully.
- b. When Growing Family receives a personal check directly from a customer and either misplaces or loses the check, does Growing Family contact the customer to ask for a replacement? If not, why not?
- c. What does Growing Family do when it receives the customer's personal check from the Postal Service, but the check bounces?

#### RESPONSE

- a. No, I do not. Unless witness Berkeley was mistaken, she said very clearly that the Postal Service would not reimburse Growing Family in these circumstances and that we would be on our own to collect payment from the recipient. See my testimony at page 15. Specifically, see witness Berkeley's response to GFIUSPS-15 Tr. 4474-75, where she states that the Postal Service would require the mailer to contact the recipient to obtain a substitute payment, that the Postal Service "assumes" that the recipient will issue a substitute check and that, if the mailer is unable to obtain a substitute payment, the Postal Service will not pay the claim. The same uneauivocal 'no" answer was given in response to GF/USPS-T39-33(c), where Growing Family asked whether, if the mailer "is unable to obtain a replacement check for any reason, such as the recipient cannot be located, simply refuses or claims that she did not receive the package, the Postal Service will replace the missing payment." See also Tr. 4589-90.
- b. When Growing Family receives a personal check directly from a customer and either misplaces or loses the check, Growing Family generally sends one letter to the customer to ask for a replacement. While this doesn't happen very often and even though we don't keep detailed statistics, it is our belief that about 80% to 90% of these letters are ignored by the recipient and that about 10% to 20% of our customers who originally paid by check are willing to send a replacement check if we lost the original check. Some of those will deduct from their second check the cost of a stop payment order.
- c. All checks received by Growing Family (whether the proceeds of a COD transaction, an order mailed to Growing Family, or an order placed with a Growing Family employee in a hospital) are deposited in the Company's main bank account. Any deposited checks that "bounce" are transmitted directly to an electronic re-presentment contractor engaged by Growing Family. If the

check was returned due to insufficient funds, this contractor makes regular phone contacts with the issuers' banks to determine when there may be funds in the account sufficient to allow the check to clear. When the contractor has word or believes that there is a sufficient balance in the account, the contractor electronically re-presents the check to the issuing bank. In addition to presenting the check for payment of the face amount, the contractor presents to the issuer's account a charge of \$25.00 to cover the costs of the re-presentment service, as permitted by law.

If, after four months the contractor was not able to successfully collect the item, the contractor sends a series of letters to the customer requesting payment and informing the customer that if payment  $\dot{\mathbf{z}}$  not made the account will be forwarded to a collection agency.

Overall the re-presentment contractor is able to collect approximately 40% of the face value of the checks sent to them for presentment and collection

After about six months from the date a check bounces due to insufficient funds. the account is sent to a collection agency. Checks returned for other reasons (account closed, checks reported stolen, etc.) are researched internally to determine whether the amount is actually owed (package shipped to the customer and not returned) and are sent directly to a collection agency for dunning. The collection agency's success rate in collecting these accounts is generally less than 2%.

**USPS/GF-T1-14.** Prior to the [sic] May 2005, you testify that Growing Family was paid at the amount to be collected, in the case of loss. Putting aside postage and fees, please assume that a lost package had a reproduction cost of \$7.29 and an amount to be collected of **\$70.** 

- a. Prior to May 2005, would you agree that, in the event of this example of a lost package, assuming both payment from the Postal Service and the customer (after subsequent reshipment), Growing Family would be paid \$140. while paying \$14.58 for total reproduction cost of two copies of the package? If you do not agree, please explain fully.
- **b.** Not including claims payouts as described in subpart a, how often is Growing Family paid for two separate sets of the same photographs?

#### **RESPONSE:**

a. Your question just about answers itself. I agree that if Growing Family were paid twice, it would be paid twice, so that it would receive a total of \$140. I do not agree, however, that \$14.58 would represent its "total reproduction cost," since there would be only one reproduction. The first set of prints was produced, not reproduced, and the cost of producing those prints included not only the cost of making the prints themselves but also fees to the hospital, payment to the photographer, sales expense. overhead and all other costs that go into our pricing. I also must say that the assumption you asked me to make about getting paid twice is unrealistic, since our experience is that after the several months it takes for us to learn that a package has been lost, the chances of making a sale are slim. In fact, we do not even try, because the cost of soliciting a purchase are high, and the success rate is very low.

In addition, I do not see how this differs from the postal insurance situation. Let's say that we produce and sell fancy picture frames and mail them to customers who had paid for them, but with a policy that if the customer is unsatisfied, she may return the frame for a full refund. And let's assume that we insure the frames with the Postal Service for their retail price of \$50. If the frame is lost or destroyed by the Postal Service before delivery, assume that we would be reimbursed for the \$50. If the customer were still interested in purchasing a frame, we would send another one. In this situation, we would have incurred two production costs and received a total of \$100, just as, in your hypothetical, we would have incurred two production costs and received \$140. The only difference is that this result is far more likely to occur in the case of the frame than in the case of photos that soon become dated and that have not already been paid for.

I should also add that, even though you have pointed to a <a href="https://hypothetical.nih.gov/hypothetical.nih.g

I'd also like to address your hypothetical's assumption that the package was "lost." In our view, very, very few if any of our packages are actually lost, and this makes a big difference in the likelitiood that the hypothetical double payment will occur. The word "lost" can be used loosely to mean a variety of conditions, some of which are temporary.

But I believe that the use of "lost" in this context, while a convenient euphemism, is misleading.

The packages we mail are substantial in length, width, thickness and weight. When a COD package is not returned to Growing Family, and Growing Family does not receive the customer remittance, it is pretty clear to us that this USPS failure is not because the package fell or was blown by the wind out of a mail truck, <u>not</u> because rain dissolved the package or washed both the delivery address and the return address off of the label. <u>not</u> because the package fell into a crack, and <u>not</u> because it simply disappeared.

These are newborn baby photos and clearly labeled as such. The packaging therefore does not mislead people into thinking that the contents are of commercial or intrinsic value, such that someone would take the risk of stealing them.

Rather, we believe that when both the package and the remittance are not returned to Growing Family, it is likely to be due to any one of the following reasons:

- 1. The package was delivered to the addressee without payment, and
  - the addressee now contends that she did not get the package or simply refuses to return it or pay for it, or
  - b. the addressee opened the package and either took one or more sheets as a keepsake or left all the photos in the envelope, and returned the package to the carrier. (If the package was left overnight, the addressee may have scanned it into a computer and returned the

envelope full of photos.) Now the carrier is in a tough situation, since the package was obviously opened and therefore cannot be returned to Growing Family as "undeliverable" or 'refused." The carrier may see himself as having no alternative other than to claim that the package was lost.

2. The package was delivered to the addressee, payment was made, and the payment was either lost by the carrier. or lost or misdirected by the Postal Service.

Clearly, in situations in which the packages are not truly and literally "lost" but are delivered without payment or the payment is thereafter lost or misdirected by the Postal Service, there will be no subsequent reshipment as the question assumes.

**b.** If I understand the question, other than the situation in part a, Growing Family would get paid for two separate sets of the same photographs only when a customer re-orders a second set, which happens less than 2% of the time.

**USPSIGF-TI-15.** With respect to Growing Family's COD packages mailed with the Postal Service:

- a. What were the average amounts to be collected for COD purchased in 2005 2004 and 2003?
- b. For what percent of total COD mailings were claims filed in 2005. 2004 and 2003?
- c. Of the claims filed, what percent were determined to be payable in 2005. 2004. and 2003?
- d. Of the claims filed, what percent were reimbursed **at** the amount *to* be collected **in** 2005,2004 and 2003?
- e. **Of** the claims filed, what percentage were **(1)** for loss; **(2)** for damage; and **(3)** for no remittance in 2005,2004 and 2003?

### **RESPONSE:**

- a. d. We are still trying to collect this data. It will be provided as soon as possible.
- e. We do not file claims when returned packages are damaged. When we receive neither the package nor the remittance, we have no way of knowing whether the reason for the claim is loss or no remittance, although as I said in my testimony and in response to question 14, it is hard to believe that a significant number of our packages are actually "jost."

**USPSIGF-TI** -16. Please refer to page 15, lines 12-13 of your testimony. If Growing Family was paid directly and misplaced the payment, or if the payment was accidentally destroyed, wouldn't Growing Family approach the customer for a reissue of payment? If not, why not?

#### **RESPONSE:**

In some cases we would incur the time and expense to do so, even though we would expect the return to be less than we would like, Many of our customers are difficult to get in touch with (new baby in the house...). Since in this situation they already have the photos, when they find out why we are calling, they are even more difficult to get in touch with. Even the customers who comply with this reasonable request to send another check will usually expect to place a 'stop payment" order with their bank, and they will expect to deduct that cost from their second check. When you add up the time involved to call the customers, and the postage and paper to send dunning letters, it's a very marginal proposition — the revenues from the collection activity are mostly absorbed by the cost of doing it. Sending letters to people or calling them on the phone to ask for money is not something we have figured out how to do in a profitable way.

The difference between this situation, of course, and the situation in which the Postal Service loses the payment, is that in the latter case, we have paid the Postal Service a fee to ensure that the payment is not lost but is delivered to us. As I said in the portion of the testimony you cite, this fact means that the burden should be on the Postal Service, not Growing Family. See also the response to USPS/GF-T1-13.

**USPS/GF-T1-17.** Please refer to page 16, lines **10-12** of your testimony. Are you stating that for 3 to 4 percent of the COD packages you never receive reimbursement of any kind – either from the Postal Service or the addressee?

### **RESPONSE:**

No. I am stating that in 3-4 percent of the **cases**, we submit a claim, because the Postal Service did not return the package and did not forward any funds from the recipient. About half of our claims are resolved by the Postal Service returning the package to us *more* than 90 days after the date of mailing, thus in about **2%** of COD shipments result in an indemnity payment.

**USPS/GF-T1** -18. Please refer to page 17, lines 1-2 of your testimony.

- a. How has the reduction of claims payments affected the number of your new customers?
- b. How has the reduction of claims payments impacted your repeat customers?

#### **RESPONSE:**

- a. The reduction of claims payments, as far as I know, has not affected the number of new customers, and I never claimed that it did. I said that the reduced payments affected Growing Family's business, because it reduced our revenues in a difficult market. Surely, a business can be affected by more than a loss of customers. I imagine that the increase in gasoline costs during much of this year affected the Postal Service's business even if it did not reduce the number of postal customers or the amount of mail.
- b. The reduction of claims payments, as far as I know, has not affected the number of repeat customers, and I never claimed that it did. I said that the reduced payments affected Growing Family's business, because it reduced our revenues in a difficult market. Surely, a business can be affected by more than a loss of customers. I imagine that the increase in gasoline costs during much of this year affected the Postal Service's business even if it did not reduce the number of postal customers or the amount of mail.

1	MR. STRAUS: Can we go off the record a
2	second?
3	CHAIRMAN OMAS: Yes.
4	(Discussion held off the record.)
5	CHAIRMAN OMAS: Thank you, Mr. Straus.
6	Is there any additional written cross-
7	examination for Witness Paul?
8	(No response.)
9	MR. STRAUS: Mr. Chairman, before we move
L O	on, Witness Paul sends his regrets at not being cross-
11	examined today, and he asked me to provide for visual
12	examination examples of what they mail.
13	There has been mention in the testimony and
L <b>4</b>	in the written cross-examination about whether
15	packages are lost or not lost and whether they're
16	delivered or not delivered, and Mr. Paul made the
17	point that these are substantial packages that really
18	wouldn't be lost at the rate οξ 100 a week
19	I would just like to leave here some
20	examples of actual packages that were returned to show
21	the kinds of mailings made by Growing Family. These
22	are packages with just the photos. These are packages
23	that contain greeting cards or other merchandise that
24	they sell along with the photos.
25	He wanted you to see these so you could
	Heritage Reporting Corporation (202) 628-4888

1	understand his testimony that they don't exactly fall
2	between the cracks and that when they're not returned
3	it's probably because the recipient has them.
4	CHAIRMAN OMAS: All right. Thank you, Mr.
5	Straus.
6	MR, STRAUS: And there's nice little baby
7	pictures inside.
8	CHAIRMAN OMAS: Thank you.
9	Mr. Costich, would you please call our next
10	witness?
11	MR. COSTICH: Thank you, Mr. Chairman. The
12	OCA calls Mark Roberts.
13	CHAIRMAN OMAS: Mr. Roberts, would you
14	stand?
15	Whereupon,
1 6	MARK J. ROBERTS
17	having been duly sworr, was called as a
18	witness and was examined and testified as follows:
19	CHAIRMAN OMAS: Please be seated.
20	Mr. Costich?
2 1	DIRECT EXAMINATION
22	(The document referred to was
23	marked for identification as
24	Exhibit No. OCA-T-1.)
25	//

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Т		BY MR. COSTICH:	
2	Q	Professor Roberts, do you have before you	
3	two copie	es of a document identified as OCA-T-I?	
4	A	Yes, I do.	
5	Q	Is this your direct testimony in this	
6	proceedin	g?	
7	A	Yes, it is.	
8	Q	Does it contain corrections that were filed	
9	yesterday	with the Commission?	
10	A	It does.	
11	Q	If you were to testify orally today, would	
12	this be y	rour testimony?	
13	A	Yes, it would.	
14		MR. COSTICH: Mr. Chairman, I move the	
15	admission	n of OCA-T-1.	
16		CHAIRMAN OMAS: Without objection. So	
17	ordered.		
18		Hearing no objection, I will direct counsel	
19	to provide the reporter with two copies of the		
20	corrected	d direct testimony of Mark J. Roberts.	
21		That testimony is received into evidence	
22	However,	as is our practice, it will not be	
23	transcrib	ped.	
24	//		
25	//		

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1	(The document referred to,
2	previously identified as
3	Exhibit No. OCA-T-1, was
4	received in evidence.)
5	MR. COSTICH: Mr. Chairman?
6	CHAIRMAN OMAS: Yes?
7	MR. COSTICH: Sorry to interrupt. I
8	neglected to ask Professor Roberts if he also sponsors
9	Library Reference OCA-LR-L-2?
10	THE WITNESS: Yes, I do.
11	CHAIRMAN OMAS: Mr. Roberts, have you had an
12	opportunity to examine the packet of written cross-
13	examination presented to you this morning?
14	THE WITNESS: Yes, I have, Mr. Chairman.
15	CHAIRMAN OMAS: If those questions contained
16	in that packet were posed to you orally today, would
17	your answers be the same as those you previously
18	provided to the Commission in writing?
19	THE WITNESS: Yes, they would.
20	CHAIRMAN OMAS: Are there any additions or
21	corrections that you would like to make to those
22	answers?
23	THE WITNESS: No.
24	CHAIRMAN OMAS: Counsel, would you please
25	provide two copies of the corrected designated written
	Heritage Reporting Corporation (202) <b>628-4888</b>

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cross-examinat on of Witness Roberts to the reporter?
 2
                 That material is received into evidence and
       is to be transcribed into the record.
 3
                                  (The document referred to was
 4
                                  marked for identification as
 5
                                  Exhibit No. OCA-T-1 and was
 6
 7
                                  received in evidence.)
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## BEFORE THE POSTAL RATE COMMISSION WASHINGTON. DC 20268-0001

Postal Rate and Fee Changes, 2006

Docket No. R2006-1

## DESIGNATION OF WRITTEN CROSS-EXAMINATION OF OFFICE OF THE CONSUMER ADVOCATE WITNESS MARK J. ROBERTS (OCA-T-1)

Party

**Interrogatories** 

Postal Rate Commission

USPSIOCA-TI-1-47

**United Parcel Service** 

USPSIOCA-TI-3-6, 8-9, 11-21, 24-26, 29-31, 35,

37-38, 44-47

United States Postal Service

USPSIOCA-TI-1-47

Respectfully submitted,

Steven W. Williams

Secretary

# INTERROGATORY RESPONSES OF OFFICE OF THE CONSUMER ADVOCATE WITNESS MARK J. ROBERTS (T-1) DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory	<b>Desianatina Parties</b>
USPS/OCA-T1-1	PRC. USPS
USPSIOCA-T1-2	PRC, USPS
USPSIOCA-T1-3	PRC. UPS, USPS
USPSIOCA-TI-4	PRC. UPS, USPS
USPSIOCA-TI-5	PRC, UPS, USPS
USPSIOCA-T1-6	PRC, UPS, USPS
USPSIOCA-T1-7	PRC, USPS
USPS/OCA-T1-8	PRC, UPS, USPS
USPS/OCA-T1-9	PRC. UPS, USPS
USPS/OCA-T1-10	PRC, USPS
USPSIOCA-T1-11	PRC. UPS, USPS
USPSIOCA-T1-12	PRC, UPS. USPS
USPS/OCA-T1-13	PRC, UPS, USPS
USPS/OCA-T1-14	PRC, UPS. USPS
USPS/OCA-T1-15	PRC. UPS, USPS
USPSIOCA-TI-16	PRC, UPS, USPS
USPS/OCA-T1-17	PRC. UPS. USPS
USPSIOCA-T1-18	PRC, UPS, USPS
USPSIOCA-T1-19	PRC, UPS, USPS
USPSIOCA-TI-20	PRC, UPS, USPS
USPSIOCA-T1-21	PRC, UPS, USPS
USPSIOCA-TI-22	PRC. USPS
USPS/OCA-T1-23	PRC, USPS
USPSIOCA-T1-24	PRC, UPS, USPS
USPS/OCA-T1-25	PRC. UPS, USPS
USPSIOCA-T1-26	PRC. UPS, USPS
USPSIOCA-TI-27	PRC. USPS
USPSIOCA-TI-28	PRC. USPS
USPS/OCA-T1-29	PRC, UPS, USPS
USPSIOCA-T1-30	PRC, UPS, USPS
PS/OCA-T1-31	PRC. UPS, USPS
PSIOCA-TI-32	PRC. USPS

### interrogatory

USPS/OCA-T1-33
USPSIOCA-T1-34
USPSIOCA-T1-35
USPSIOCA-T1-36
USPS/OCA-T1-37
USPS/OCA-T1-38
USPSIOCA-T1-39
USPSIOCA-T1-40
USPS/OCA-T1-41
USPSIOCA-T1-41
USPSIOCA-T1-43
USPSIOCA-T1-45
USPSIOCA-T1-45
USPSIOCA-T1-46
USPSIOCA-T1-47

### **Designatina Parties**

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### USPSIOCA-TI-1.

Do you agree that automation-compatible letter-shape mail pieces have distinct costcausing characteristics for Postal Service sorting operations from nonrnachinable pieces? If you do not agree, please explain your position.

### Response.

**Yes.** This is one reason for disaggregating FHP into multiple categories where the categories reflect differences in the type of processing the letters will receive. See the discussion of this point in OCA-T-I. section V.C.

### USPSIOCA-T1-2

Do you agree that automation-compatible letter-shape pieces may be sorted in the Postal Service's automation mailstream at lower marginal cost than otherwise identical pieces processed in the manual mailstream? If you do not agree, please explain your position.

### Response.

Yes. This is one reason for disaggregating FHP into multiple categories and allowing FHP in each category to have a different regression coefficient in each labor demand equation. See the discussion of this point in OCA-T-1, section V.C. Whether these differences can be measured precisely using the MODS data is the focus of OCA-T-1. section VIII.C

#### USPSIOCA-TI-3

Please refer to your testimony at page 9, lines 9-13.

- a. Please confirm that, in the "Roberts' Model," results of which are presented in Table 1 of your testimony, you assume "that there is an aggregate 'output' for each operation" that is measurable empirically as incoming and outgoing FHP measures that are disaggregated by shape but not disaggregated by cost pool. If you do not confirm. please explain fully.
- b. Have you estimated versions of your models that employ FHP disaggregated by cost pool, or which otherwise impose a "separability" restriction? **If so**, please describe fully the estimating equations, estimation methods. data employed, and results, including any relevant specification test results.
- c. If your response to part **(b)** indicates that you have not estimated versions of your models that employ cost pool-disaggregated FHP or which otherwise impose a "separability" restriction. or that you have not done so in the course of preparing OCA-T-1, please confirm that you have not formally tested the "separability" restriction.
- d. Please also refer to USPS-T-12 at page 26. lines 10-21. For each of the sorting operation activities listed by Dr. Bozzo (runtime. quasi-allied labor, setup and take down, waiting for mail. "overhead" astivities. and other not-handling activities), please provide your operational explanation why each would (or should) depend on volumes of mail other than those processed within the cost pool for a sorting operation. If you have no operational explanation(s) in any case, please so indicate.

### Response.

- a. Output in those regressions is total FHP for each shape. It is the sum of incoming and outgoing FHP for each shape and is not disaggregated by USPS cost pools. The point of Table 1 and the discussion in Section IV, p. 8-14. is to show the substantial empirical difference between estimating labor elasticities with respect to plant mail volume and labor elasticities with respect to piece feedings in an operation
- b. No, I have not estimated models that disaggregate FHP by USPS cost pools. That is not consistent with the model of production I have developed and I cannot see a production model that would give rise to regressions of this form. It makes no sense to estimate these regressions since there is no clear production model that underlies them.

c. I do not confirm this. Assuming that the production process is separable into sorting operations implies that the labor demand in each stage only depends on total plant output and the capital inputs and relative wage rates for labor inputs *in* the same *stage*. See Roberts (2006), pages 14-16 for more detailed discussion. This can be tested by examining the statistical significance *of* the capital coefficients for other operations in each labor demand equation. Based on the t-statistics for the capital coefficients reported in Table 3 for letter-sorting operations, there is evidence that the capital coefficients are not zero in a couple of cases. Using the data for 1999-2004 reported in Roberts (2006), Table 4, the t-statistics for the capital in other operations are virtually always significant. which is not consistent with separability. In the case of flat-sorting, several of the capital coefficients in OCA-T-1. Table 6 are not zero. Rather than focusing on just the t-statistics for the individual capital coefficients, a better approach is to test the joint hypothesis that all the coefficients for capital stocks in other operations are equal to zero

For completeness, this table reports the F-statistics for this joint hypothesis for each of the labor demand equations in Table 3 and 6

Operation	Capital coefficients set equal to zero	F- statistic (P-value)	Conclusion
Letters - manual	MPBCS, DHCS. OCR, AFCS, Other	15.96 (. <b>007</b> )	Reject Separability at 1% signif. level
Letters	MPBCS, DBCS, AFCS, Other	20.07 (.000)	Reject Separability at 1% signif. level
Letters - Agg. BCS	OCR, AFCS, Other	8.83 (.032)	Reject Separability at 5% signif. level
Flats - manual	FSM881, FSM1000, AFSM, Other	46.11 (.000)	Reject Separability at 1% signif. level
Flats - FSM1000	FSM881, AFSM, Other	5.13 ( 077)	Reject Separability at 10% signif. level
Flats - AFSMIOO	FSM881, FSM1000, Other	19.88 (. <b>000</b> )	Reject Separability at 1% signif. level

d I have no operational explanation for why these narrowlydefined activities should depend on volumes of mail in other cost pools. However, it is important to recognize that these activities are only one piece of the relationship between mail volume in a plant and labor hours in a sorting operation. How heavily the sorting operation is used will depend on what other operations are present and utilized in the plant and this **will** affect the relationship between mail volume in the plant and hours in the sorting operation.

#### USPS/OCA-T1-4.

Please refer to your testimony at page 9, lines 1-2, and page 10, footnote 2.

- a. Do you agree that the "mail volume, for a rate class, which is the ultimate term of interest" is measured by the Postal Service's Revenue, Pieces and Weight (RPW) system? If not, please explain the basis for your disagreement.
- b. Please explain your understanding of the differences between **MODS** FHP and the Revenue, Pieces and Weight (RPW) measure of "mail volume, for a rate class."
- c. Unless your response to part (a) indicates that FHP and RPW volumes for class, subclasses, and/or rate categories are conceptually identical, please either (1) confirm that Dr. Bozzo's characterization of the relationship between subclass volumes (i.e, the term V in USPS-T-12. equation 5) and FHP in USPS-T-12 (page 45, line 14. to page 46. line 5, esp. equations 5, 8 and 9) is correct or (2) provide. using comparable notation, the relationship between subclass volumes and your FHP measures that you believe to be correct.
- d. Please refer to USPS-LR-L-1. Appendix H, page H-5. describing the "distribution key" method for computing volume-variable costs for mail of various classes, subclasses. and other rate categories. Please refer to Docket No. R2000-1, USPS-T-15 at pages 53, lines 7-20. where Dr. Bozo states:

Directly estimating the elasticities of cost drivers with respect to RPW volumes is infeasible. so the CRA extensively uses the "distribution key" method to compute volume-variable costs by subclass... The computational advantage of the distribution key method is that it dispenses with the marginal analysis of the relationship between volumes and the driver. The price of simplicity is what has been termed the "proportionality assumption." Formally. the distribution key method and the constructed marginal cost method are equivalent when the cost driver is a linear function of the mail volumes or. equivalently, the number of handlings of a representative piece of a given subclass is "constant."

Please confirm that the "proportionality assumption" concerns the "elasticities of cost drivers with respect to RPW volumes." If you do not confirm, please explain.

e. Have you conducted any analysis of the relationship between **MODS** FHP and RPW volumes? If so, please provide a detailed description of the methods and results of your analysis.

### Response

a. I agree that the ODIS-RPW system produces estimates of mail volume by rate class.

As I understand it, this is a sample-based system, where the sampling unit is a Mail Exit

Point (MEP) in a day (for destineting mail). This does not provide data that is directly

comparable with the FHP/TPF/Hours data collected every day for every processing plant by the MODS system.

- b. MODS FHP does not include any information on the rate class. It does provide a measure of the volume of mail in each processing plant on every day (aggregated to the quarter for the analysis). As I understand it, ODIS-RPW provides sample-based estimates of the volume of mail and distribution across rate classes. If a processing plant is included in the sample of MEPS then it will contain information on the plant-level volume of destinating mail for the days that are sampled.
- c. Dr. Bouo's characterization of my model in equations (8) and (9) of USPS-T-12 is not correct. I do not specify any relationship between FHP and piece handlings and do not use piece handlings in any part of my modeling. I directly estimate the relationship between FHP and labor hours using data on each of these variables. Given my estimates of labor elasticities with respect to FHP,, and FHP<sub>OUT</sub> (or any finer disaggregations of FHP), the cost of an additional letter in the incoming sort routine can be allocated across rate classes using a distribution key that gives the proportion of mail by rate class in MODS operations that are assigned to the FHP, aggregate. Similarly for FHP<sub>OUT</sub> Notice that this use of a distribution key does not assume that volume is proportional to piece handlings. This differs from the USPS procedure which uses a distribution key to allocate volume variable costs, derived from a model based on piece handlings. across rate classes. This is not the same thing as allocating volume variable costs across rate classes unless volume and piece handlings occur in fixed proportion.
- d. Not confirmed. The proportionality assumption means that a 1% increase in the plant's volume of mail in each rate class will result in a 1% increase in the number of

piece handlings in every sorting operation. When the proportionality assumption is made in a theoretical model of production it does not say anything about what data set (RPW) is being used to measure the variables for empirical application.

e. The MODS data sets provided in USPS LR-L-56 contained three variables, DLETTERS. DFLATS, and DPARCELS that are the number of destinating letters, flats, and parcels for each plant that are drawn from the ODIS-RPW data system. In preparation for using them as instrumental variables in the estimation, I examined their correlation with the MODS FHP variables in the data set. Using the base sample of plants for the whole time period 1999-2005, I found the following simple correlations between the variables:

Corr(DLETTERS, FHP, LETTERS) = .929

Corr(DLETTERS, FHP, LETTERS) = 890

Corr(DFLATS, FHP, FLATS) = ,860

Corr(DFLATS, FHP<sub>OUT</sub> FLATS) = .781

Corr(DPARCELS, FHP, PARCELS) = 143

Corr(DPARCELS, FHP<sub>OUT</sub> PARCELS) = -.016

This indicated that for letters and flats the **destinating** variables were reflecting size differences across plants that were also reflected in the FHP variables. More important for estimation **is** the correlation between these variables after removing plant means (fixed effects) from each variable, **When** each variable is expressed as a deviation from the plant mean the correlations are:

Corr(DLETTERS, FHP, LETTERS) = .320

Corr(DLETTERS, FRP LETTERS) = -.084

Corr(DFLATS, FHP, FLATS) = .263

Corr(DFLATS, FHP, FLATS) = -.0157

Corr(DPARCELS, FHP,, PARCELS) = -.004

Corr(DPARCELS, FHP, PARCELS) = -.002

This indicates that the destinating letters and flats might have some value in measuring quarterly variation in FHP, but are basically uncorrelated with FHP,

I also examined one other issue relating to mail volume by rate class. I requested that the USPS construct a distribution key giving the allocation of FHP incoming and outgoing for letters, flats, and parcels across CRA rate classes. I provided the list of MODS categories that went into each of the FHP aggregates. The USPS provided this distribution key to me and I have reviewed it. This demonstrated to me that it is possible to construct a distribution key linking the measures of mail volume I use in my labor demand models to the mail volume by rate class.

#### USPSIOCA-TI-5.

Please refer to your testimony at page 10, footnote 2. Please also refer to USPS-T-12 at page 46, lines 6-13, where Dr. Bozo states:

In the CRA, A is estimated (as shares of handlings by subclass, i.e., distribution keys) from In-Office Cost System (IOCS) data. The process makes use of the most widely-known function of IOCS: producing estimates of proportions of handlings of the subclasses of mail (see also USPS-T-46, Section II.B.1). It is important to note that the IOCS-based distribution key analysis is updated annually with the current year's IOCS sample data, as are the calculations of total labor costs by operation and (potentially) the variabilities. [Footnotes omitted.]

**Do** you disagree with Dr. Bozzo's characterization of the CRA methods? If so, please state the basis for your disagreement.

Response.

I have no disagreement with the piece of text from USPS-T-12 that is quoted in the question. However, it misses the important point that the use of a flexible distribution key (i.e. one that is updated each year) does not relax the proportionality assumption.

#### USPS/OCA-T1-6.

Please refer to your testimony at page 10, lines 2-5, and page 11.

- a. Please confirm that the term "volume" in this passage specifically refers to FHP measures used in your analysis. If you do not confirm. please explain.
- b. Do you agree that the purpose of distribution handlings (i.e., first and subsequent handlings in sorting operations) is to sort pieces of mail to various nodes of the Postal Service network—ADCs, AADCs, 3- and 5-digit ZiP Codes, etc. I/ not, please explain your understanding of the purpose of the handlings.
- Please confirm that the terms  $\delta_j$  are the elasticity **c** TPF (or TPH) in cost pool j with respect to FHP for the shape of mail associated with cost pool j. If you do not confirm. please provide the correct definition.
- d. Please confirm that the result  $\delta_i > 1$  implies that a given percentage change in FHP results in a larger percentage change in TPF (or TPH) in cost pool j, other things equal. If you do not confirm, **please** provide what you believe to be the correct interpretation.

#### Response.

- a. When I talk about specific empirical results and coefficient estimates, "volume" refers to FHP or some disaggregation of FHP, such as FHP, and FHP<sub>out</sub>. That is the empirical measure of the plant's mail volume that I use (see Roberts 2006, Section IV.A). In the theoretical discussions, such as Roberts (2006, Sections II and III), "volume" refers to the number of pieces of mail sorted in the plant, if there is a single output, or, if multiple outputs are used, the number of pieces of mail with a fixed set of arrival/destination characteristics.
- b. I agree
- **c.**  $\delta_j$  is the elasticity of the cost driver in operation j, with respect to the volume of mail in the plant. assuming that the production process is separable into sorting operations. See Roberts (2006, equation 13, p. 18 and surrounding discussion). In the empirical results, I use the Postal Service definition of the cost driver in the sorting operation,  $TPF_j$  (or  $TPH_j$ ), and my definition of mail volume, FHP in the plant. The estimated values of  $\delta_j$  reported in OCA-T-1. Tablel, column 3, p.13 are the elasticities of  $TPF_j$  (or  $TPH_j$ ) with respect to plant  $FHP_j$ . It is also useful to notice that the joint estimation of  $\epsilon_j$  and  $\delta_j$  is the idea underlying

the **USPS** methodology called the "Constructed Marginal Cost Method", USPS-LR-L-1, Appendix H, pages **H-5** and H-6. The USPS advocates the use of this **method**, as opposed to the "Volume **Variability/Distribution** Key Method" when "there *is* reason to believe that the relationship **between** mail volume and the cost driver is not linearly homogenous."

d. Confirmed if the question is referring to estimated values of  $\delta_j$  in Table 1.

#### USPSIOCA-T1-7.

Please refer to USPS-T-12 at pages 17 and 20.

- a. **Do** you agree that mail does not normally flow from manual letter- and flat-shape sorting operations to automated sorting operations? If not, please explain the basis for your disagreement.
- b. Do you agree that mail does not normally flow from "downstream" (or "subsequent") sorting stages (e.g., incoming operations) to "upstream" sorting stages (e.g., outgoing operations)? If not, please explain the basis for your disagreement.
- c. Please confirm that if mail does not normally flow from manual sorting operations to automated sorting operations, manual FHP will not normally result in subsequent handlings in automated sorting operations. If you do not confirm, please explain.
- d. Please confirm that if mail **does** not normally flow from "downstream" operations to "upstream" operations, FHP in "downstream" operations will not **normally** result in subsequent handlings in "upstream" operations. If you do not confirm, please explain.

#### Response

- a. Yes
- b. Yes.
- c. Confirmed.
- d. Confirmed

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#### USPS/OCA-T1-8.

Please refer to your testimony at page 2, lines 15–18, and Tables 1, 5, and 7.

- a. Please reconcile the differences between the results labeled "Roberts' Model" in Table 1 and the results presented elsewhere.
- b. If the results labeled "Roberts Mode!" in Table 1 are not your recommended results. please provide a version of Table 1 incorporating your recommended results.

#### Response.

- a. Table 1 includes total plant FHP for each shape as the single output variable in the regressions. For letters, these results are replicated in Panel B of Table 5. All other results in Table 5 (and Table 4) are based on models that use two (FHP,, and FTP) or more (FHP, automated, FHP, nonautomated, FTP) automated and FTP nonautomated) outputs. For flats, the Table 1 results for single-output results for plants that use AFSM are replicated in Table 7, Panel C. All other results in Table 7 include two outputs (FHP) and FTP output.
- **b.** My recommended results are based on the two output models. As will be explained in my upcoming response to USPSIOCA-TI-12, the preferred results are:

Letters (Table 4 Panel B)

Elasticity with respect to a change in	Manual Labor	OCR	Aggregate BCS	Total Letters
FHP <sub>IN</sub>	.911 (.110)	783 ( 227)	.930 (.080)	.912 (.062)
FHP <sub>OUT</sub>	.609 (.077)	420 ( 153)	.202 (.056)	.364 (.044)
FHP,, and EEP,	1.520(.075)	1.204 (241)	1.132(.091)	1.276 (.061)

'riority Mail (Table 9, Panels A arid B)

Elasticity with respect to a change in:	Manual SPES Labor		Total Priority
	A. Plants only use	manual	
FHP <sub>IN</sub>	.487 (.132)		.487 (.132)
FHPour	.697 (.190)		.697 (.190)
FHP,, and IHP,	1.184 (.142)		1.184 (.142)
	B. Plants <b>use</b> manual	and SPES	
FHP <sub>IN</sub>	.393 (.176)	.277 (.221)	.364 (.143)
FHP <sub>out</sub>	.804 (.168)	.254 (.204)	.668 (.162)
FHP <sub>IN</sub> and FHP <sub>out</sub>	1.197(.167)	.531 (.200)	1.033 (.135)

Cancellation (Table 11,2002-2005 data)

Elasticity with respect to a change in:	Labor
⊞; Letters	.701 (.047)
FR Flats	.217 (.079)
FHP <sub>out</sub> for Letters and Flats	.918 (.074)

**As** discussed in OCA-T-1 Section VIII.D, I do not recommend using the elasticities for flats sorting operations.

#### USPSIOCA-TI-9.

Please refer to your testimony at page 13 (Table 1) and page 14, footnote 6. Please enumerate all "differences in sample. other control variables, and econometric technique" you implemented in the models used for the "USPS Model" column of Table 1, and explain your reason(s) for implementing each change.

#### Response

The equations used to estimate the results in Table 1, column 2, are the basic regression equations utilized by the Postal Service for many years. They are regressions of the logarithm of labor hours in each of the sorting operations on the logarithm of TPF in the same operation. Capital inputs for other operations, relative wages, and technology dummy variables are all included as controls. Beyond that, I do not specify or estimate the model in exactly the same way as the Postal Service, but rather specify it in a way that is consistent, given the additional separability assumptions, with the overall model of production I have developed. The main differences between the model I estimate and the one estimated by the USPS include:

- a) I use the sample of plants and time periods that I developed to estimate my model and the selection criteria are described in OCA-T-I, Section V.A.
- b) Tuse the capital stock variables that I construct and that are described in section V.B. Linclude all types of capital that are used in sorting each shape. For letters this includes capital stocks in MPBCS. DBCS. OCR, AFCS. and an aggregate of other plant capital. For flats Lincluded capital stocks in FSM881, FSM1000, AFSM. and other plant capital. These are included because this *is* what the theoretical model indicates should **be** included in the labor demand equations.

- c) In estimating models with TPF as the explanatory variable, I use the instrumental variable estimator for all equations, not just the ones for manual operations. I believe that TPF is likely to be an endogenous variable. I discussed the reasons for this in Roberts (2002), Section VII.D. In that section I also used the Hausman statistic to test that TPF was exogenous in labor demand models that use it as an explanatory variable. I rejected the exogeneity condition in 9 of 13 sorting operations. I believe that estimation of models witl?TPF as an explanatory variable have to begin with treatment of the possible endogeneity of TPF.
- d) I do not include time dummies in the labor demand equations. There is no evidence in the operational testimony that the methods used to sort the mail in an operation vary by quarter of the year. The volume of mail, of course, varies at quarterly frequencies, and this drives variation in labor hours, but the technology does not. Instead, in this case I use quarterly dummy variables as additional instrumental variables in the estimation.

Overall, *the* goal of **Table** 1 *is* not *to* reproduce the results in USPS-T-12, but to show that, holding all aspects of the sample, model, and econometric techniques fixed at the specifications that I have used, it is possible *to* empirically reconcile the elasticities of labor demand with respect to FHP that I advocate using with the elasticities of labor demand with respect to TPF that are advocated *in* the Postal Service testimony. The missing link is the elasticity of TPF in each operation with respect to FHP, which is reported in column 3. This missing link is the empirical counterpart of the proportionality assumption that is used in the Postal Service model and the empirical evidence is inconsistent with the assumption. Notice

also that disaggregating the elasticity with respect to volume  $(\eta_i)$  into the product of the elasticity of hours with respect to piece handlings  $(\varepsilon_i)$  and the elasticity of **piece** handlings with respect to mail volume  $(\bar{\delta}_i)$  underlies the Postal Service's "Constructed Marginal Cost Method (USPS-LR-L-1, Appendix H, pages H-5 and H-6) which it advocates using if the proportionality assumption does not not.

#### USPSIOCA-TI-IO.

Please refer to Tables 3 and 6 in your testimony, OCA-T-1. Please provide the marginal time (workhours) per FHP implicit in each of the coefficients on log(FHPIN) and log(FHPOUT). Please show your calculations.

#### Response

Define  $\eta_{iN}' = \frac{\partial \ln(H')}{\partial \ln(FHP_{iN})}$  and  $\eta_{out}' = \frac{\partial \ln(H')}{\partial \ln(FHP_{out})}$  as the elasticities of hours in operationj with respect to FHP, and FHP<sub>OUT</sub>. These are the parameters estimated in the labor demand equations. The marginal hours are calculated for each observation i (plant and lime period) as:

$$\left[\frac{\partial H'}{\partial \overline{F} H P_{IN}}\right]_{i} = \eta_{IN}' \left[\frac{\left(H'\right)_{i}}{\left(F H P_{IN}\right)_{i}}\right] \text{ and } \left[\frac{\partial H'}{\partial \overline{F} H P_{OUT}}\right]_{i} = \eta_{OUT}' \left[\frac{\left(H'\right)_{i}}{\left(F H P_{OUT}\right)_{i}}\right].$$

The mean values, averaged over all observations, and expressed as hours/thousand FHP, are:

Sorting Operation	Marginal Hours with respect <b>to</b> FHP <sub>IN</sub>	Marginal Hours with respect to FHP <sub>out</sub>		
Letters (Table 3)				
Manual	.309	.243		
OCR	.041	.037		
Aggregate BCS	.242	.184		
Flats (Table 6)				
Manual	.051	.791		
FSM1000	.242	1.858		
AFSM	272	1.899		

#### USPS/OCA-T1-11.

Please refer to USPS-T-12, Section VII.G (page 101-104) and Appendix E.

- a. Did you consider Dr. Bozo's FY 2005 update of your March 2006 model in preparing your testimony? If not. why not? If so, please explain why you rejected that approach.
- b. If you do not discuss the matter in your response to part a, please describe your views on the relative merits of the aggregate BCS operation group employed in your analysis and the approach employed by the Postal Service using separate incoming and outgoing BCS groups.

#### Response

a. Yes, I considered it. There are six tables presented in appendix E. but none of the text in section VII.G references the tables or describes what is in them, **so** the reader *is* left guessing about exactly what is being presented. Nonetheless, there appear to be four changes that Dr. Bozomade when reestimating my 2006 model. First, he included an additional year of data, 2005. where my estimation stopped in **2004.** By itself, this is a fairly small change, adding **4** additional quarters of data **to** the 24 quarters that Lincluded. It appears that the results are very similar to what Linconed in my 2006 paper

Second, he used an alternative capital series that was based on quarterly, rather than annual. updates of the plant-level investment expenditures. The goal was to eliminate some of the anomalous observations where hours would be positive in an operation and capital stock would be zero. This change seemed to reduce, but not eliminate, this particular anomaly. This is a pretty extreme anomaly, and is indicative of a larger problem with the capital series being out of synch with the MODS data. Just because the capital series (eventually) becomes positive when hours are positive, does not mean that the problem is fixed. I believe this is still a limitation in the data that

needs to be corrected. The models are being estimated using the time-series variation in hours, output, and capital variables and it is important that these be properly matched over time.

Third, there is a use of different weights (hours shares by operation) in aggregating the different sorting operations into overall elasticities for letters and flats. There is some flexibility in choosing the weights to use (i.e. the mean or one specific year or an average of a couple of years), as long as they are representative of the time period for which the estimation was done. What is not appropriate is to estimate the labor demands for a time period when an operation is very important (i.e. FSM881 in 2000) and then aggregate them using weights from a time period when the operation is not used (i.e. FSM881 in 2005). The reason is that the allocation of mail volume across operations at any point in time depends on the configuration of technologies in use in the plant at that time. The aggregation weights should reflect actual experience for the time period in which the estimation is conducted.

Fourth, the labor demand for **BCS** and AFSM are divided into incoming and outgoing operations. However, in the preferred results, there is a strange asymmetry in the way this is done, (see USPS·T-12. p.50, lines 2-13 and Section VII.B). Hours in the BCS operation are divided into two labor demand equations, one for hours in the incoming operation and one for hours in the outgoing operation. Each labor demand depends on one output, the TPF in the same operation: Hours in the AFSM operation are the sum of hours in incoming and outgoing operations and are treated as a single labor demand equation. The measures of TPF in the outgoing sorting scheme and TPF in the incorning scheme are treated as two outputs in the one labor demand equation.

Overall, I do not think this change in model specification is well justified and is not directed at the major difficulties that exist with the **USPS** model. In Section VII.G, Dr. Bozo presents an update of Roberts (2006) where the BCS operation is now split into separate incoming and outgoing labor demands. There is no link made *to* my theoretical model that would justify this change in the estimating equations. It hink it is possible *to* develop a coherent model that would treat the outgoing and incoming sorting schemes as separate production processes (whether or not that is appropriate is a different issue), but it would not lead to an estimating model that looks like the one presented in Section VII.G. In particular, all the sorting operations would be divided into incoming and outgoing components with separate labor demands for each. Overall, I found the disaggregation of the BCS operation into separate incoming and outgoing operations to be inconsistent with the rest of the empirical model.

Fifth, I completely disagree with the conclusions in the last paragraph of Section VII.G. (p. 103, lines 7-16). The point of Dr. Bouo's estimation of my model is to show that after replacing a few elements of the model the results look more like the ones presented in USPS-T12 and that this is appropriate because they are estimating the "same economic quantities." *As I* show in OCA-T-I. Section IV, the models are not estimating the same economic quantities unless the proportionality assumption is true. This assumption is rejected in the data. I think that trying *to* find combinations of variables, weights, and level of disaggregation that make the estimates match empirically without reexamining and comparing the underlying modeling frameworks is the wrong approach *to* clarifying the source of the differences

#### USPS/OCA-T1-12.

Please refer to Section VIII.A (pages 31 -33) of your testimony. Please also refer to Dr. Neels's testimony, UPS-T-1, at page 30, especially Table 10.

- a. Did you analyze, or consider an analysis, of the validity of your excluded instruments, using the Anderson-Rubin statistic employed by Dr. Neels or some other statistic you consider more appropriate? If so, please describe your analysis and provide all results. If not, why not?
- b. If your answer to part a indicates that you did not conduct an analysis of instrument validity, either (i) provide the point estimates and associated p-values of the Anderson-Rubin statistic for each cost pool using your base model or (ii) explain why you believe that the statistic is an inappropriate diagnostic.
- c. Please describe how your criteria for determining instrument relevance show that your analysis was not susceptible to the "weak instruments" problem discussed by Dr. Neels.

#### Response

a. The Anderson-Rubin statistic is used to test the validity of excluded instruments (more precisely, the overidentifying restrictions) in a model when the LIML estimator is used. This statistic would be appropriate for the model used in USPS-T12, but is not appropriate for the IV estimator I use. There is an analogous test statistic, referred to as the J-statistic, that can be used to test the overidentifying restrictions with the IV estimator I use. In my 2002 and 2006 papers, this test could not be used because the labor demand equations are exactly identified, meaning that the number of instrumental variables exactly equals the number of endogenous output variables, When a model is exactly identified there is no test of overidentifying restrictions and so the J-statistic is not relevant. The J-statistic will always equal zero when the model is exactly identified. In the model presented in my testimony in OCA-T-1 I have added six additional IV's, three quarterly dummy variables and the destinating letters, flats, and parcels, so the

model is now overidentified and the J-statistic can be constructed. I did not do the test because I did not think of it prior to receiving this interrogatory Reported in the table on the next page are the values of the J-statistic and .05 and .01 critical values for each of the labor demand equations. The null hypothesis that is being tested is the joint hypothesis that the model is correctly specified and the IV's are uncorrelated with the error term in the labor demand equation. Under the null hypothesis the J-statistic has a  $\chi^2$  distribution with m-k degrees of freedom, where m=number of instrumental variables and k = number of endogenous output variables. The test results indicate that we reject the exogeneity of the IV's for four operations. manual letters, aggregate BCS. FSM1000, and AFSM and do not reject it for the remaining six. The reason we get a rejection in the four cases is that, after controlling for FHP, and FHP<sub>OUT</sub>, there is still a pattern of quarterly variation in the residuals of those four labor demand equations. This leads the residuals to be correlated with the IV's, particularly the quarterly dummy variables, and leads to the rejection. I believe this is a spurious result resulting from the strong pattern of quarterly variation in the hours and output variables. The FHP variables have an exogenous quarterly pattern in them because of the actions of mailers and quarterly dummies do a good job of accounting for much of this calendar variation. Labor hours in those four operations have a quarterly pattern because of the quarterly variation in mail volume but the FHP variables do not fully account for all of it in the regressions and this leads to the rejection of the exogeneity hypothesis. The reason there is no rejection of the IV's for the priority and cancellation operations is that there is not a strong cyclical pattern in labor hours and thus not a strong pattern of quarterly variation in the residuals for those labor demand

Operation	J- statistic	Critical Values (.05 and .01 significance level)	Conclusion
Manual Letters (a)	115.44	12.59, 16.81	Reject exogeneity
OCR (a)	5.84	12.59. 16.81	<b>Do</b> not reject exogeneity
Aggregate BCS (a)	17.52	12.59, 16.81	Reject exogeneity
Manual Flats (b)		12.59, 16.81	Do not reject exogeneity
FSMIOOO (b)		12.59, 16.81	Reject exogeneity
AFSM (b)	41.04	12.59, 16.81	Rejectexogeneity
Manual Priority only (c)	2.5	15.51. 20.09	<b>Do</b> not reject exogeneity
Manual Priority (c)	10.30	15.51, 20.09	Do not reject exweneitv
SPBS (c)	8.3	15.51, 20.09	Do not reject exogeneity
Cancellation (d)	2.7	9.49, 13.28	Do not reject exogeneity

equations. One way to see if the use of the quarterly dummy variables are the cause of the test result is to reestimate the labor demand equations and redo the test dropping the three quarterly dummies from the set of IV's. I report the J-statistics for the letter and flat sorting operations in the following table.

Operation	J-statistic	Critical values (.05 and .01 significance level	Conclusion
Manual Letters	16.75	7.81, 11.34	Reject exogeneity
OCR	2 95	7.81, 11.34	Do not reject exogeneity
Aggregate BCS	0.55	7.81, 11.34	Do not reject exogeneity
Manual Flats	2.45	7.81, 11.34	<b>Do</b> not reject exoaeneitv
FSM1000	9.40	7.81, 11.34	Do not reject at .01 level
AFSM	0.35	7.8 I , 11.34	Do not reject exogeneity.

Now we do not reject exogeneity of the IV's in five of the six operations. The use of quarterly dummies as IV's is leading to the rejection of the exogeneity hypothesis in almost all the cases. In manual letters we still reject the instrument exogeneity and this is primarily the result of correlation between the residuals in the labor demand equation and the destinating letters used as an IV and I think this largely reflects spurious correlation because of the quarterly pattern in both variables. The output coefficients from models that do not use the quarterly dummies as IV's are reported in OCA-T-1, Table 4, Panel B for letters and Table 7, panel B for Rats. Given the results of this test it

would be appropriate to not use the quarterly dummies as IV's in the letter and flat sorting operations. There is a cost to this, however, and that is an increase in the standard errors of the output elasticities. Comparing the results in panel **A** vs panel B of Tables **4** and 7, it **is** obvious that the use of the quarterly dummies was helpful in reducing the standard errors of the coefficients.

- b. See my answer to part a.
- c. The F-statistics reported in OCA-T-1, Table 2 are large for both the FHP variables and the quarterly dummies. The three destinating variables are less important but their use has little effect on any result. In the first-stage regressions the excluded instruments explain virtually all of the variation in the regression. It's obvious this would be the case since the endogenous output levels have a strong pattern of quarterly variation as do the excluded instruments. while the included exogenous variables (capital stocks, relative wages, year dummies) have very little quarterly pattern.

\*

#### USPS/OCA-T1-13.

Please refer to your testimony at page 36 (especially footnote 17). page 48 (especially footnote 18), and Table 7.

- a. Please confirm that you used FY 2005 workhour weights to combine the elasticities in your "base" letter and flat models. If you do not confirm. please explain.
- b. Please confirm that you used FY 1999 workhour weights to combine the elasticities in your analysis of "Plants that do not **use** AFSM." reported in Table **7.**
- c Please confirm that FSM 881 equipment have been withdrawn from service. If you do not confirm, please explain.
- d. Please explain why you chose FY 1999 weights, with an FSM 881 share of 0.521, rather than FY 2005 weights, with an FSM 881 share of zero, for the "Plants that do not use AFSM" analysis.

#### Response

- a. Confirmed. In footnote 18. the weight used for FSM 1000 is .208, not .206 as stated.
- b. Confirmed. In the footnote to Table 7, the weight used for manual is .286, not .289 as stated.
- c. Confirmed if "withdrawn from service" means not being utilized. In 2005 there were no hours or piece feedings (TPF) reported for the FSM881 operation in any of the 304 plants in my base sample. However, in the same year, '07 of these plants still report positive values for the capital input variables (gifsm881 and gifsm881alt)
- d. The weights have to correspond to the time period that was used for estimation. Since most of the data used to estimate the regressions underlying Table 7, Panel D comes from the years prior to 2002 I chose the weights to correspond to that period. Approximately 75 percent of the sample observations come from the years 1999-2001 when the FSM881 share was very high. Approximately 17 percent of the observations came from 2003-2005 when the FSM881 was being retired. I used weights that reflect the data used for estimation

#### USPS/OCA-T1-14.

Please refer to your March 2006 paper, Table 3 (page 69).

- a. Please provide an update to the table, including data for FY 2005 Quarter 1, using the sample selection methods from your base models in OCA-T-1.
- b. Please provide tables (similar to that provided in response to part a) showing the incoming FHP, outgoing FHP, and fractions of incoming FHP by operation for manual letters. OCR, aggregate BCS. manual flats, FSM 1000, and AFSM 100 Please use the sample selection methods from your base models in OCA-T-1.

Year: quarter	Lefters			Flats		
	FHP <sub>iN</sub>	FHΡ <sub>συτ</sub>	Share of FHP <sub>IN</sub>	FHP <sub>iN</sub>	FHP <sub>out</sub>	Share of FHP <sub>IN</sub>
1999:1	25263	13327	.655	4662	1132	.805
2000:1	26837	13421	.667	4855	1151	,808,
2001:1	28225	13203	.681	5085	1131	.818
2002:1	27173	12349	.688	5071	1023	.832
2003:1	27316	11919	.696	5376	999	.843
2004:1	27432	11552	.704	5400	938	.852
2005:1	28153	10957	.720	5461	927	.855

- b. I have not measured FHP by the sorting operations listed in this question. I have measured them by the amount of presorting. I provide the FHP shares for each of these presorting categories in the tables below. The categories are defined in OCA-LR-L-2. description.pdf, page 1 and 2. XXX is a three digit code identifying the operation where FHP was assigned. The XXX codes are:
  - =111 for letters, outgoing primary in OCR/ISS/OSS operations
  - =112 for letters, outgoing secondary in ISS/OSS or OCR
  - =113 for letters, outgoing secondary on BCS
  - =114 for letters, outgoing primary on BCS
  - =101 for *letters*, incoming AADC
  - =102 for letters, incoming SCF/Primary
  - =103 for letters, incoming secondary
  - =104 for letters, incoming in OCR/ISS
  - =211 for flats, outgoing primary
  - =212 for flats, outgoing secondary
  - =201 for flats, incoming managed mail
  - =202 for flats, incoming primary
  - =203 for flats, incoming secondary

#### **Incoming Letters**

Year:qtr	FHP,,,	Share 101	Share 102	Share 103	Share104
1999:1	25263	.250	447	.223	.080
2000:1	26837	.245	.424	.256	.074
2001:1	28225	.236	.406	.287	.072
2002:1	27173	.249	,386	.301	.065
2003;1	27316	.251	,383	.311	.055
2004:1	27432	.257	.378	.316	.050
2005:1	28153	.247	.364	.344	,045

#### **Outgoing Letters**

Year:qtr	FHP <sub>OUT</sub>	Share 111	Share 112	Share 113	Share 114
1999.1	13327	.706	.008	.047	.239
2000:1	13421	.693	.012	.051	.244
2001:1	13203	.692	,012	.049	.246
2002:1	12349	.696	.007	.046	.251
2003:1	11919	.694	.006	.045	.256
2004:1	11552	.693	.005	.048	.255
2005:1	10957	.695	.005	.050	.249
		I			

Year:qtr	FHP <sub>IN</sub>	Share <b>201</b>	Share 202	Share 203
1999:1	4662	.195	.432	.373
2000:1	4855	.199	.415	.386
2001:1	5085	.192	.400	.408
2002:1	5071	.191	.352	.457
2003:1	5376	.175	.299	.526
2004:1	5400	.164	.298	.538
2005:1	5461	.170	.290	.540

#### Outgoing Flats

Year:qtr	FHP <sub>out</sub>	Share 21.1	Share 212
1999:1	1132	.952	<del></del>
2000:1	1151	.951	
2001:1	1131	.965	
2002:1	1023	.964	.036
2003:1	999	.972	.028
2004:1	938	.969	.031
2005:1	927	.968	.032

#### USPSIOCA-TI-15.

Please refer to OCA-T-1, Table 6, and to Table 5 of your March 2006 paper. Please also refer to USPS-T-12. Table E-2 (page 128).

Manual Flats	Roberts(2006) Results (Table 5, p.71)	USPS-T-12 FY 2005 Model (USPS-T-12. Table E-2, p.128)	OCA-T-I results (Base Model; Table 6, Table 7)
Incoming FHP elasticity	.526	.55	.168
S.E Incoming FHP elasticity	.140	.14	.170
Outgoing FHP elasticity	.078	.06	,422
S.E., Outgoing FHP elasticity	.073	.07	.288
Total of FHP elasticities	.604	.62	.590
S.E. of Total	Not reported	.14	.201
R <sup>2</sup>	.223	.23	.079

- a. Please confirm that the above table correctly reports the results from the specified sources. If you do not confirm, please provide a corrected table.
- b. Would you characterize the differences in the results for the "Total of FHP elasticities" for the three models listed as being statistically or qualitatively significant?
- c Please confirm that the "Incoming FHP elasticity" you report for manual flats in your March 2006 paper differs significantly from zero at the 1 ⅓ significance level in a two-tailed test. If you do not confirm, please explain.
- d. Please confirm that neither the "Incoming FHP elasticity" nor the "Outgoing FHP elasticity from the manual flats model presented in Table 6 of OCA-T-1 differ significantly from zero at commonly used significance levels using a two-tailed test. If you do not confirm, please explain.
- e. Please confirm that the manual flats model presented in Table 6 of OCA-T-1 yields higher standard errors of the FHP elasticities than the models presented in USPS-T-12 and in your March 2006 paper. If you do not confirm, please explain.
- f. Please confirm that the manual flats model presented in Table 6 of OCA-T-1 explains relatively less of the variation in manual flats workhours (as indicated by the

R-squared) than the models presented in USPS-T-12 and in your March 2006 paper. If you do not confirm, please explain.

#### Response:

- a. Confirmed.
- b. No. It must be recognized that the differences between the first and second columns are always going to be minimal because they are the same regression estimated on virtually the same data. The only difference in the data, as I understand from the discussion in USPS-T12. Section VII.G, is that the USPS estimates use data from 1999-2005, while my estimates use the same set of plants but data from 1999-2004. There is not very much new information contained in the second column results. A more insightful comparison would be based on the first and third columns where there are more substantial differences in sample and econometric method. The regressions in column 1 use 5064 observations and the regressions in column 3 use 2860 observations from 2002-2005.
- c. Confirmed
- d. Confirmed
- e. Confirmed
- f. Confirmed

#### USPS/OCA-T1-16.

Please refer to OCA-T-1, Table 6, and to Table 5 of your March 2006 paper. Please also refer to USPS-T-12. Table E-2 (page 128).

FSMIOOO	Roberts(2006) Results (Table 5, p.71)	USPS-T-12 FY 2005 Model (USPS-T-! 2, Table E-2. p. 128)	OCA-T-1 results (Base Model; Table 6, Table 7)
Incoming FHP elasticity	.651	.65	.712
S.E., Incoming FHP elasticity	.206	.21	.281
Outgoing FHP elasticity	088	09	.969
S.E.Qutgoing FHP elasticity	.085	.08	.470
Total of FHP elasticities	.563	.57*	1.681
S.E. of Total	Not reported		.334
R <sup>2</sup>	.392	.39	.333

\* Difference is due to rounding.

a. Please confirm that the above table correctly reports the results from the specified sources. If you do not confirm, please provide a corrected table.

- b. Please confirm that the "Incorning FHP elasticity" you report for FSM 1000 in your March 2006 paper differs significantly from zero at the 1 % significance level in a *two*tailed test. If you do not confirm, please explain.
- c Please confirm that neither the "Incoming FHP elasticity" nor the "Outgoing FHP elasticity from the FSM 1000 model presented in Table 6 of OCA-T-1 differ significantly from zero at the 1% significance level using a two-tailed test. If you do not confirm, please explain.
- d. Please confirm that the FSM 1000 model presented in Table 6 of OCA-T-1 yields higher standard errors of the FHP elasticities than the models presented in USPS-T-12 and in your March 2006 paper. If you do not confirm, please explain.
- e. Please confirm that the FSM 1000 model presented in Table 6 of OCA-T-1 explains relatively less of the variation in manual flats workhours (as indicated by the R-squared) than the models presented in USPS-T-12 and in your March 2006 paper. If you do not confirm, please explain.
- f. Are the differences in the "Incoming FHP elasticities" among the three models

- statistically significant? Do you regard the range between 0.65 and 0.71 **as** qualitatively significant? Please explain.
- g. Please confirm that the difference in the "Outgoing FHP elasticity" between your OCA-T-1 results and your March 2006 paper accounts for most of the difference in the total of the FHP elasticities for the FSM 1000 operation. If you do not confirm, please explain.

#### Response.

- a. Confirmed
- b. Confirmed,
- c. Confirmed, although for completeness we note that the test statistic for the Incoming FHP elasticity is 2.53 and the critical value for the test that is specified in the question is 2.58. The hypothesis would not be rejected at the 5% significance level. for example.
- d. Confirmed, if by "models presented in USPS-T12" vou mean the results presented in column 2 above. Also, see my answer to part b of question 15 above for limitations on distinguishing results between columns 1 and 2. It is also the case that the regressions generating the results in column 1 used 3980 observations from the period 1999-2004 while the regressions underlying the results in column 3 used 2325 observations from 2002-2005 and only represent plants that had the AFSM technology in use.
- e. Confirmed, if by "models presented in USPS-T12" you mean the results presented in column 2 above
- f. The differences in incoming elasticities are not statistically significant. I do not regard the difference between .651 and .712 as qualitatively significant
- g. confirmed

## RESPONSES OF OF CE )F HE ( S ADVOCATE WITNESS MARK J. )BE (T) TO I ATORIES OF JIII ED / POSTAL SERVICE

#### USPS/OCA-T1-17.

Please refer to OCA-T-1, Table 6, and to Table 5 of your March 2006 paper. Please also refer to USPS-T-12. Table E-2 (page 128).

ASMIOO	Roberts (2006) Results (Table 5, p. 71)	USPS-T-12 FY 2005 Model (USPS-T-12, Table E-2, <b>p.</b> 128)	OCA-T-1 results (Base Model; Table 6, Table 7)
Total of FHP elasticites	1.009	1.00	0.844
S.E. of Total	Not reported	.09	.047
R <sup>2</sup>	.884	.88	.856

- a. Please confirm that the above table correctly reports the results from the specified sources. If you do not confirm, please provide a corrected table.
- b. Please provide the standard error of the total of the incoming and outgoing FHP elasticities from your March 2006 AFSM 100 mode:. **as** presented in Table 5 of your March 2006 paper.
- c. Please calculate and provide the 95 percent and 99 percent confidence intervals for the total of the incoming and outgoing FHP elasticities from your March 2006 paper, using the standard error you calculated for the response to part b.

#### Response

- a. Confirmed. For completeness, we note that the underlying estimates of the elasticity for FHP incoming are .791(.085), .79(.08), and .394 (.039) for columns 1, 2, and 3, respectively. The underlying estimates of the elasticity for FHP outgoing are .218 (.027), .21 (.03), and .450 (.067) for the three columns.
- b. The standard error is .091.
- c. The 95% confidence interval **is** (.831, 1.187). The 99% confidence interval is (.775, 1.243)

#### USPS/OCA-T1-18.

Please refer to your testimony, OCA-T-1, at page 52, lines 18-19.

- a. Please confirm that your measure of "output" for cancellation operations is "FHP<sub>out</sub> for letters and flats." If you do not confirm, please explain.
- b. Please confirm that outgoing FHP includes volumes of mail that do not require cancellation—e.g., mixed ADC/AADC presort volumes. If you do not confirm, please explain.
- c Please explain why you chose FHP measures that include volumes that do not require cancellation, rather than a count (or counts) of cancelled pieces, for your measure of cancellation output.

#### Response

- a. Not confirmed. There are two outputs in the cancellation labor demand equations, FHP<sub>OUT</sub> for letters and FHP<sub>OUT</sub> for flats. Each output has a separate labor demand elasticity in the cancellation operation
- b. Confirmed.
- c. The goal is to measure the effect of a change in mail volume on labor use in the cancellation operation. That is what the regression I estimate will do. If. for example, most of the outgoing mail skips the cancellation stage that will be reflected in a small estimated volume elasticity for labor demand. If I used piece handlings in the cancellation operation as the output variable, then it would still be necessary to estimate the elasticity of piece handlings in cancellation with respect to the volume of outgoing letters and flats in order to calculate the marginal cost of a letter or flat. This is the same reason I do not use piece handlings in the labor demand equations for any of the sorting operations. At best, it only provides part of the information needed to estimate the marginal cost of processing a letter or flat.

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIES USPS/OCA-T1-19-26

USPS/OCA-T1-19. Please refer to OCA-T-1. Table 1 (page 13) and page 14, lines 11-19, where you describe your model for the "estimated 6" in Table 1 as employing the "same equations as the labor demand equations used in this paper [replacing] the log hours variable on the left-hand side with the log TPF in the operation." Please also refer to the Stata program threestep.do, in OCA-LR-2.

a. Please confirm that your estimating equations for the "estimated  $\delta$ " in Table 1,as implemented in the program threestep.do, have the mathematical form (omitting certain subscripts):

In 
$$TPF$$
, =  $a$ , +6, In  $FHP_{chn}$  +  $\gamma X$ , + $\varepsilon$ ,

where the subscript j indicates cost pool, i indicates site, and shp indicates the shape of mail associated with cost pool j;  $\gamma$  is a vector of coefficients;  $X_i$  is a vector of control variables (year and technology dummy variables, capital variables. relative wage): and  $\mathbf{E}$  is a random disturbance term. If you do not confirm, please provide the correct form of your equations and explain fully.

b. Please confirm that in the MODS system, total pieces fed are defined such that, for cost pool j:

$$TPF$$
, =  $FHP$ , +  $SH$ , + Rejects

where FHP, is the FHP in cost pool j, SH, is subsequent handlings in cost pool j, and Rejects, is rejected and reworked pieces (for automated operations). If you do not confirm, please provide the relationship you believe to be correct, and please cite all supporting documentation for your position.

- c Does the equation you confirm (or otherwise provide) in response to part (a). assume that the effect of a unit of FHP on the TPF in cost pool j is unaffected by the cost pool within a shape category in which the FHP is recorded? If you claim it does not, please show in detail how the effect may differ by the source of FHP. If so, please describe and provide all formal testing you, performed or other evidence you developed, to indicate that the assumption is correct.
- d. Did you consider any other specifications for the "estimated 6" in Table 1? If so. please describe each in detail, provide all results you obtained from each alternative specification you explored, and explain why you prefer the specification you confirm (or otherwise provide) in part (a) over each alternative.
- e. Does the specification for the "estimated δ" you presented in your Table 1 account, in any way, for the mailflow characteristics you confirmed in response to USPS/OCA-T1-7? If so, please explain in detail how your models do so. If not, why not?

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIES USPS/OCA-T1-19-26

#### **RESPONSE TO USPS/OCA-T1-19**

- (a) confirmed, although please note that the coefficient vector  $\mathbf{v}$  vanes by operation and should be written as  $\mathbf{v}_j$
- (b) Confirmed as a definition, if by "subsequent handlings" you mean all pieces handled in cost pool *j* that received their FHP count in some other cost pool. In my understanding SH<sub>j</sub> is not reported in the MODS data. Also since FHP, is measured using weight arid a conversion factor, while TPF, is measured using machine counts (see USPS-T12, Section II.E, p. 23. line 19 to p. 24, line 15). this relationship would not hold in the MODS data even if SH, was measured independently
- (c) This question appears to be asking if the coefficient 6 in the regression in part (a) will depend on which operations are responsible for the FHP count in the plant. The answer is no, it does not depend on where the FHP is assigned, but it does depend on how intensively operation *j* is used in sorting the mail volume received in the plant. As an example, suppose that all the letter mail received in the plant is barcoded, receives its FHP count in the BCS operation, and skips the OCR operation entirely, then δ<sub>OCR</sub> will equal zero. Suppose instead that 70% of the letter mail is barcoded and receives its FHP count in the BCS operation and skips OCR. The remaining 30% of the letter mail received in the plant goes through the OCR operation and each piece generates one TPF, then δ<sub>OCR</sub> will equal .3. It does not matter if the mail that passes through the OCR operation received its FHP count in OCR or in some previous step, if there was one. The

### RESPONSE **OF** OCA WITNESS MARK J. ROBERTS TO INTERROGATORIESUSPSIOCA-TI-19-26

coefficient  $\delta_j$  does not depend on where FHP is assigned in the plant, but it does depend on how much of the total mail received in the plant passes through operation j.

- (d) No.
- (e) **No.** Placing this structure on the estimating equations is not necessary for measuring the relationship between the volume of mail entering the plant and the piece feedings in different operations.

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIESUSPS/OCA-T1-19-26

USPS/OCA-T1-20. Please refer to OCA-T-I, Tables 1 and 3-7. Please also refer to your response to USPS/OCA-T1-8. [OCA was informed by the Postal Service that this question refers to interrogatory 8 rather than interrogatory "X," as originally filed by the Postal Service.]

a. Please confirm that your estimating equations for the "estimated n" in Table 1 have the mathematical form (omitting certain subscripts):

$$\ln HRS_i = \alpha_i + \eta_1 \ln FHP_{obs} + \gamma X_i + \varepsilon.$$

where the subscript j indicates cost pool, i indicates site, and shp indicates the shape of mail associated with cost pool j;  $\gamma$  is a vector of coefficients;  $\mathbf{X}$ , is a vector of control variables (year and technology dummy variables, capital variables, relative wage); and  $\mathbf{E}$  is a random disturbance term. If you do not confirm, please provide the correct form of your equations and explain fully.

b. Please confirm that your estimating equations for the "base models" in Tables 3-7, have the mathematical form (omitting certain subscripts):

In 
$$HRS_i = \alpha_i + \eta_{r,cool} \ln FHP_{cho,cool} + \eta_{r,co} \ln FHP_{cho,cool} + \gamma^1 X_i + \varepsilon$$
,

where the subscript j indicates cost pool, i indicates site, and "shp" indicates the shape of mail associated with cost pool j; "out" and "in" indicate, respectively, the outgoing and incoming operations for the given shape;  $\mathbf{Y}$  is a vector of coefficients;  $\mathbf{X}$ , is a vector of control variables (year and technology dummy variables, capital variables, relative wage); and  $\mathbf{E}$  is a random disturbance term. If you do not confirm. please provide the correct form of your equations and explain fully.

- c. Does the equation you confirm (or otherwise provide) in response to part (a) assume that the effect of a unit of FHP on the workhours (HRS) in cost pool j is unaffected by the cost pool within a shape category in which the FHP is recorded? If not, please show in detail how the effect may differ by the source of FHP.
- d. Does the equation you confirm (or otherwise provide) in response to part (b) assume that the effect of a unit of FHP on the workhours (HRS) in cost pool j may be different for incoming FHP versus outgoing FHP, but otherwise is unaffected by the cost pool within a shape category in which the FHP is recorded? If not, please show in detail how the effect may differ by the cost pool in which the FHP is recorded.

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIES USPS/OCA-T1-19-26

#### RESPONSE TO USPS/OCA-T1-20

- (a) Confirmed, although please note that the coefficient vector  $\mathbf{y}$  varies by operation and should be written as  $\mathbf{y}_i$ .
- (b) Confirmed, subject to the same comment in part (a).
- (c) This question appears to be asking if the coefficient  $\eta_j$  in the regression in part (a) will depend on which operations are responsible for the FHP count in the plant. The answer is no, it does not depend on where the FHP is assigned, but it does depend on how intensively operation j is used in sorting the mail volume received in the plant. As an example, suppose that all the letter mail received in the plant is barcoded, receives its FHP count in the BCS operation, and skips the OCR operation entirely, then  $\eta_{OCR}$  will equal zero. Suppose instead that 70% of the letter mail is barcoded and receives its FHP count in the BCS operation and skips OCR. The remaining 30% of the letter mail received in the plant goes through the OCR operation and each piece requires the same number of labor hours to handle, then  $\eta_{OCR}$  will equal .3. It does not matter if the mail that passes through the OCR operation received its FHP count in OCR or in some previous step, if there was one. The coefficient  $\eta_j$  does not depend on where FHP is assigned in the plant, but it does depend on how much of the total mail received in the plant passes through operation.
- (d) The answer is the same as the answer to part (c) except now the coefficients  $\eta_{j,IN}$  and  $\eta_{j,OUT}$  allow the relationship between hours and FHP to vary depending on whether the FHP is assigned in an incoming or outgoing operation. The coefficient  $\eta_{i,OUT}$ , for example, will not depend on where the FHP in the outgoing

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIESUSPS/OCA-T1-19-26

operation is assigned but will depend on how much of the outgoing FHP passes .through operation *j*.

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIESUSPSIOCA-TI-19-26

USPS/OCA-T1-21. Please refer to your responses to USPS/OCA-T1-4c and to USPS/OCA-T1-20b. Please also refer to USPS-T-12 at page 45. line 21. to page 46, line 1. Dr. Bozo states:

In Prof. Roberts's notation. his models use

$$H_{L} = (FHP_{Out,Leiter}, FHP_{in,Leiter})$$
 (8)

$$H_F = (FHP_{Out,Flat}, FHP_{In,Flat})$$
(9)

- a. Given the specification(s) you confirm or provide in response to USPS/OCA-T1-20b, is Dr. Bozo wrong to claim !hat your "base" models for letter- and flat-shape operations "use" MODS FHF handlings as given by equations (8) and (9)? If so. please explain.
- b. Please confirm that your estimating equations include no terms for "volumes" other than MODS FHP handlings. (That is. this question addresses right-hand-side variables in your estimating equation. not instrumental variables you use to identify your models.) If you do not confirm. please explain fully what other volume or handling measures you claim to use, and show in detail where you use them.

#### **RESPONSE TO USPSIOCA-T1-21**

- (a) If Dr. Bozo is saying that my model specifies and estimates the relationship between labor hours in an operation and MODS FHP in the plant, then lagree.

  If he is saying that I must specify or estimate a relationship between hours and piece handlings in an operation or between piece handlings in an operation and MODS FHP, I disagree.
- (b) Confirmed. Although MOOS FHP is disaggregated into multiple categories. In the base model it is disaggregated into FHP<sub>IN</sub> and FHP<sub>OUT</sub> for each shape. In OCA-T-1, Sections V.C and VIII.C, each of these is further disaggregated into two categories reflecting the level of automation preparation.

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIESUSPS/OCA-T1-19-26

USPSIOCA-TI-22. Please consider the econometric specification of your labor demand models. Please explain in detail why you consider it appropriate to include capital variables on the right-hand side of your estimating equations, and explain why you feel your econometric treatment of your capital variables—including your treatment of those variables as exogenous, predetermined, or such description as you deem appropriate—is justified.

#### **RESPONSE TO USPSIOCA-TI-22**

The reason that capital variables are included in the labor demand models follows directly from the specification of the production function and cost minimization assumption. It is explained in detail in Roberts (2002), Section II., particularly II.B. and IV.B, and Roberts (2006), Section II.C. The empirical model treats the capital stock of each of several types of machines as exogenous *in* the labor demand. That means that the stocks of machinery do not respond to quarterly shocks to the labor demand equations. Rather, the deployment of capital reflects longer-term considerations including the development of new technology. It is also true in the PCN data that the stock of a type of equipment often remains constant in a plant, sometimes for several years, and *is* clearly not being adjusted to short-run fluctuations in demand for mail processing

### RESPONSE OF **OCA** WITNESS MARK J. ROBERTS TO INTERROGATORIESUSPS/OCA-T1-19-26

USPS/OCA-T1-23. Please refer to your response to USPS/OCA-T1-4(e).

a. Please confirm that the OCA's precise distribution key request was as follows:

OCA/USPS-1. Please provide a separate distribution key and a separate dollar total for each of the following "cost pools." where each pool is an aggregate of MODS codes.

a Pool *Lo*: (29, 30, 40, 46, 47, 91. 261. 262, 271, 272. 281, 291, 297,831,832. **841**, **842**, **851**, 852, 861, 862, 871, 872, 881, 882, 891, 892, 961, 962, 971, 972) This group of codes is intended to contain all and only outgoing letter operations. Please verify that the list is correct for FY 2005, or make necessary corrections, before creating the distribution key and dollar total.

b. Pool *Lr.* (43, 44, 45, 150, 160, 168, 169, 243, 246, 249, 263, 264, 265, 266, 267,273, 274, 275, 276, 277,278, 283, **284**, 285, 286, 287, 293, 294, 295, 296, 297,298, 483, 484, 485, 486, 493, 504, 833, 834, 835, 836, 837, 843, 844, 845, 846,847, 853, 854, 855, 856, 857, 863, 864, 865, 866, 867, 868, 869, 873, 874, 875,876, 877, 878, 879, 883, 834, 885, 886, 887, 893, 894, 895, 896, 897, 898, 899, 914, 915, 916, 917, 918, 919, 925, 926, 963, 964, 965, 966, 967, 973, 974, 975, 976, 977, 978, 979) This group of codes is intended to contain all other (not outgoing) letter operations. Please verify that the list is correct for **FY** 2005, **9r** make necessary corrections, before creating the distribution key and dollar total.

c. Pool Fo : {60, 69, 70, 141, 142, 331, 332, 421, 422, 441, 442, 461,462, 811, 812) This group of codes is intended to contain all and only non-Priority outgoing flat operations. Please verify that the list is correct for FY 2005, or make necessary corrections, before creating the distribution key and dollar total.

d. Pool Fr: {73, 74, 75, 143, 144. 145. 146, 147, 148, 170, 175, 178, 179, 194, 195, 196, 197, 333, 334. 335, 336, 337. 338,423, 424,425,426,427,443,444,445,446,447,448,451,463,464, 465, 466, 467, 468, 813, 814, 815. 816. 817) This group of codes is intended to contain all other (not outgoing) non-Priority flat operations. Please verify !hat the list is correct for FY 2005, or make necessary corrections, before creating the distribution key and dollar total.

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIESUSPSIOCA-TI-19-26

- e. Pool *Po*: {50, 51, 52, 100, 130, 134, 135. 138.255. 258,320, 321, 322, 450, 818) This group of codes is intended to contain all outgoing operations not included in *Lo* or *Fo*. Please verify that the list is correct for FY 2005, or make necessary corrections, before creating the distribution key and dollar total.
- f. Pool *Pr.* (53, 54, 55. 136, 137, 139. 200, 257, 259. 324, 325, 326, 819) This group of codes **is** intended **to** contain all operations not included above. Please verify that the list is correct for FY 2005, or make necessary corrections, before creating the distribution key and dollar total.

If you do not confirm, please explain fully

b. Please confirm that the OCA's distribution key request neither mentions FHP. nor provides any other methodological directions other than the intended level of MODS operation aggregation. If you do not confirm, please explain fully.

#### **RESPONSE TO USPS/OCA-T1-23**

- (a) Confirmed
- (b) Confirmed. No consideration of FHP was necessary. These six cost pools are aggregates over the sorting operations used to process incoming and outgoing letters, flats, and parcels

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIES USPS/OCA-T1-19-26

OCA/USPS-T1-24. Please refer to your response to USPS/OCA-T1-4. Consider a mailstream that may be divided into outgoing and incoming operations, with processing nodes (origin and destination plants, ADCs/AADCs, etc.) consistent with the Postal Service's network.

- a. Please confirm that, according to MODS FHP definition, FHP count(s) should be recorded in the first distribution (sorting) operation where a piece of mail is sorted, in each facility where !he piece receives distribution (sorting) handling If you do not confirm, please explain fully.
- b. Please confirm that, for a given piece of mail, the number and location (by incomingloutgoing operations andlor network nodes) of FHP counts (if any) may depend on the piece's origin-destination pair andlor presort level. If you do not confirm, please explain.
- c. Consider a collection of mailpieces of a given shape and subclass (say, P1) whose originIdestination pair and/or presort level permits it to bypass piece sorting operations in plants entirely. Please confirm that such mailpieces should generate no FHP counts in MODS. If you do not confirm, please explain how you believe pieces that bypass sorting operations would generate FHP.
- d. Is it your understanding that ODIS-RPW volumes include. in principle, the number of unique pieces in P1 notwithstanding that the P1 pieces do not generate FHP? Please explain any negative answer fully.
- e. Let V1 denote the number of pieces in P1. Is it your understanding that, in principle, ODIS-RPW counts the V1 pieces in P1 under the appropriate subclass or other mail category measured in that system? Please explain any negative answer fully.
- f. Please confirm that the relationships between V1 and FHP may be represented as follows:

$$FHP_{0.1} = 0 \cdot V1$$

$$FHP_{0.1} = 0 \cdot V1$$

If you do not confirm, please explain fully.

- g. Please express the equations relating FHP to V1 in vector or matrix notation,
- h. In your framework, what is the marginal cost in the sorting operations you model for a piece in the **set** P1? Show in detail how your variability models and any feasible subclass distribution approach you consider appropriate would produce the correct result, in principle, and explain whether the method is an example of the "constructed marginal cost" method, the "volume variabilityldistributionkey" method (as those terms are used in USPS-LR-L-1, Appendix H) or some other method.

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIESUSPSIOCA-TI-19-26

- i. Consider a collection of mailpieces P2, with volume V2. whose originIdestination pair and/or presort level permits it [sic] enter piece sorting operations at the destination plant. Do you agree that such mailpieces should generate one incoming FHP count each, no outgoing FHP counts, and V2 pieces should be recorded in ODIS-RPW? If not, please explain fully the basis for your disagreement.
- j. Please confirm that the relationships between V2 and FHP may be represented as follows:

$$FHP_{int2} = 0 \cdot V2$$
  
 $FHP_{int2} = 1 \cdot V2$ 

- **k.** Please confirm that the relationship between V2 and your shape-based FHP outputs could be characterized using equations similar to those in part i, by specifying the additional detail of the shape-based mailstream in which the FHP for the V2 volumes are recorded, and with zero FHP recorded in the other FHP outputs. If you do not confirm, please explain.
- 1. Please express the equations relating FHP to V2 in part i in vector or matrix notation.
- m. Consider a collection of mailpieces P3. with volume V3. whose originIdestination pair and/or presort level requires sorting at an outgoing plant, an ADC or AADC, and an incorning plant that is no! the same facility as the ADC/AADC. Do you agree that such mailpieces should generate one outgoing FHP count each, two incoming FHP counts each, and V3 pieces should be recorded in ODIS-RPW? If not, please explain fully the basis for your disagreement.
- n. Please confirm that the relationships between V2 and FHP may be represented as follows:

$$FHP_{out,3} = 1 \cdot V3$$
$$FHP_{in,3} = 2 \cdot V3$$

If you do not confirm, please provide the equations you believe to be correct and explain fully how your equations are consistent with MODS FHP measurement practices.

- o. Please express the equations relating FHP to V1 in vector or matrix notation.
- p. Do you agree that relationships to those in parts (f). (j), and (n) could be specified for each of the N operationally distinct volume categories, with the nth category (volume Vn) given by

$$FHP_{out,n} = a_{out,n} \cdot Vn$$
  
 $FHP_{in,n} = a_{in,n} \cdot Vn$ 

### RESPONSE OF **OCA** WITNESS MARK **J.** ROBERTS TO INTERROGATORIESUSPSIOCA-TI-19-26

Where  $a_{out,n} \ge 0$  and  $a_{in,n}$   $n \ge 0$  are parameters that depend on the characteristics of Vn and the structure of Postal Service sorting operations? If not, please provide the relationships you believe to be correct and explain fully.

- q. Please confirm that the sum V1+V2+...+Vn+...+VN is, by definition, the total number of unique pieces in the postal system. If you do not confirm, please explainfully.
- r. Please confirm that, in general, the sums of the FHP variables will be different from the sum in part (q). If you do not confirm. please show how the sums of **FHP** and the sums of the volumes are identical.
- s. Let FHP, be the sum of incoming FHP for each of the N volume categories, and FHP<sub>out</sub> be the corresponding sum of outgoing FHP. Please express the relationship between the vectors (FHP<sub>in</sub>, FHP<sub>out</sub>) and (V1 ...., Vn,..., VN) in vectorImatrix notation
- t. Please refer to USPS-T-12, pages 45-46 (equations 8 and 9) and page 49, lines 14-18, especially equation 14. Taking Ki to represent your vector of capital controls, Xi to represent other control variables in your models, and with the handlings Hi are specified using the appropriate vector of shape-based FHP in Dr. Bouo's equation (8) or (9) (USPS-T-12, pages 45-46), is Or. Bozzo incorrect in characterizing your labor demand equations as cases of his equation 14? If so, please explain in detail how equation (14) fails to encompass your estimating equations as a special case.
- u. Consider the equation H = A V, where H is a vector of FHP handlings and V is a vector of ODIS-RPW volumes (i.e. unique piece counts by subclasses andlor other relevant characteristics)—i.e., a variation of Or. Bczzo's equation 5, at USPS-T-12. page 45—where A is a matrix of coefficients that depends on the characteristics of V and of the Postal Service's mailflows. Is it your tastimony that such an equation mischaracterizes the relationship between FHP handlings and RPW volumes? If so, please explain in detail how it does so.

#### **RESPONSE TO USPS/OCA-T1-24**

I believe this question addresses the issue of constructing a distribution key for the cost pools that can be constructed using my elasticity estimates. Before attempting to answer the detailed parts, let me summarize and draw a parallel with the USPS methodology.

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIES USPS/OCA-T1-19-26

The three-part methodology used by the USPS first uses plant-level panel data from MODS to estimate the relationship between piece handlings in a sorting operation and labor hours. A constant elasticity of hours with respect to piece handlings is constructed for each sorting operation (USPS-T-12, Table 1, page 3). The estimation of the elasticities does not utilize any information on the volume of mail in each plant. Once these elasticities have been constructed the use of plant-level MODS data is finished.

The second step of the process constructs the total expenditure on labor in each sorting operation by summing over the expenditure in all plants. Each sorting operation is referred to as a cost pool. The total expenditure in each cost pool is multiplied by the constant elasticity for that cost pool estimated in the first step. This produces the volume-variable cost of each sorting operationlost pool (USPS-T-11, Table 1).

The third step of the process occurs entirely at the aggregate level. Each cost pool is disaggregated or distributed across the CRA rate classes using the share of piece feedings in the cost pool that are attributable to each rate class. These rate class shares are constructed by sampling piece feedings in the cost pool/sorting operation. A rate class that appears frequently in the sample of piece feedings will generate a large share and thus a large fraction of the cost pool's variable costs will be distributed to it. This distribution is done separately for each cost pool. The volume-variable costs for each rate class are then constructed by summing over the cost pools.

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIESUSPS/OCA-T1-19-26

Contrast this with the methodology I recommend. First. I define categories of mail based on the type of processing that they require. Specifically, mail receiving an outgoing sort in a processing plant is treated as one category **a** mail and mail receiving an incoming **sort** is treated as another category. (These categories can be further divided based on levels of presorting as described in OCA-T-1, Section V.C.). These are the output categories for each plant. **I next** use the MODS plant-level data to estimate the relationship between the volume **of** mail in each output category and labor hours in each sorting operation. This produces a constant volume elasticity for each sorting operation for each category **of** output (for example, OCA-T-1, Table **4**, Panel A). Specifically, plant-level information on the volume of mail is used to estimate these relationships. Next I aggregate these elasticities across sorting operations **to** get a total labor demand elasticity for **each category of** output (**the** last column of OCA-T-1, Table **4**, Panel A). At this point the use of the plant-level MODS data is finished.

This is the point at which my testimony in OCA-T-1 stops because I do not have the additional information needed *to* carry out the distribution of costs to rate classes

Nonetheless I can describe how it should **be** done. The remaining two steps parallel the last two steps used by the USPS, but with a couple of differences.

The next step is to create pools of volume-variable costs for each category of output (not each sorting operation). This is done by constructing the total cost of processing each category of output, for example the total cost of processing all outgoing mail, by summing the expenditures to process that category of mail over all plants. Each of these cost pools is then scaled by the elasticity of hours with respect to that category of

### RESPONSE OF **OCA** WITNESS MARK **J**. ROBERTS TO INTERROGATORIES **USPS/OCA-T1-19-26**

output. This is the volume variable cost for this category of output. Notice that the cost pools, and thus volume variable costs, are defined for each category of output, not each sorting operation.

The final step is to allocate each of these cost pools across rate classes. This would be done by constructing a distribution key that gives the share of each rate class that appears in the output category. You would construct this by sampling the pieces of mail in each output category and constructing the shares of each rate class in the total. A rate class that accounted for many of the mail pieces in the output category would receive a large share of the variable cost for that output category. Notice that the sampling to construct the distribution key should be based on pieces of mail in the output category, not piece feedings in a sorting operation as used in the USPS methodology. The goal should be to construct a random sample of the pieces of mail in an output category and use it to construct the empirical frequency distribution across the rate classes for the output caiegory. This would be repeated for each output category so there is a different distribution key for each output category.

- a. Confirmed.
- b. Confirmed.
- c. Confirmed. If the mailpieces are not processed in piece sorting operations they will not generate FHP. They will also not generate any processing costs.
- d. I have not worked with **the** ODIS-RPW data and do not know enough about its sampling methodology to answer this.

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIESUSPS/OCA-T1-19-26

- e. See my answer to part (d).
- f. See my answer to part (c).
- g. See my answer to part (d).
- h. See my answer to part (c).
- i. Confirmed that it should generate one incoming FHP and no outgoing FHP. I have not worked with the ODIS-RFW data and do not know enough about its sampling methodology to answer the question with respect to V2.
- j. See my answer to part (i).
- k. See my answer to part (i).
- I. See my answer to part (i).
- m. Confirmed that it should generate one outgoing FHP and two incoming FHP. I have not worked with the ODIS-RPW data and do not know enough about its sampling methodology to answer the question with respect to V3.
- n. See my answer to part (m)
- o. See my answer to part (m).
- p. It is not clear what is meant by "distinct volume categories." It would be helpful to have a complete listing of what these distinct volume categories are.
- q. See my answer to part (d).
- r. While I do not know exactly what sum is being referred to in part q, I agree that summing FHP over all plants will not equal the number of pieces of mail in the postal system. A single piece of mail can pass through more than one plant and so can receive more than one FHP count during its processing journey.
- s. See my answer to part (d)

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- t. Yes, Dr. Bozzo is incorrect in characterizing my labor demand equations as special cases of his equation 14. My labor demand functions depend on the volume of mail in the plant, not the piece handlings in an operatior,. See Roberts (2002), Section II.A and Roberts (2006), Sections II.B, II.C, II.E, and IV.A for the details of the model that give rise to my labor demand equations. To write the equation in this way and then to say that I specify "handlings with a common Hi for all operation within a shape-based mailstream." confuses the general case and the special case. In Roberts (2006), Section III, I show that the USPS model that gives rise to labor demand equations like equation 14 is a special case of the model I develop, not the other way around.
- u. See the last paragraph of my comments in the introduction to this question for how to define H, A. and V in this equation in a way that makes sense for use as a distribution key given my modeling framework.

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIESUSPSIOCA-TI-19-26

USPSIOCA-TI-25. Please refer to your responses to USPS/OCA-T1-3(b)-(d). Also consider a product transformation function (as in Robert *G*. Chambers, Applied Production Analysis, Cambridge University Press 1989, page 260) describing a Postal Service plant with the form:

$$g(H,L,K;H^{*},L^{*},K^{*};X,X^{*})$$

where *H*, *L*, *K*, and *X* are, respectively, vectors of handlings (i.e., the operations' "outputs" —possibly but not necessarily your FHP volume measures), variable (labor) inputs, quasi-fixed'inputs, and other factors affecting the production process (e.g., site-specific factors) for the modeled cost pools. Asterisks denote the corresponding variables, if any, for operations outside the scope of your analysis.

Considering that you claim no! to have considered models with cost pool-level handlings, and have no operational explanation for how your preferred characterization of sorting output is consistent with cost causatisn in any sorting operation activities in any cost pool. is it your testimony that a transformation function such as that expressed above is only a "clear production model" using your characterization of output, and not any other? If so. what is the basis for your belief?

#### **RESPONSE TO USPSIOCA-TI-25**

Please review question USPSIOCA-T1-3d and my response. The question had a specific list of activities and I did not say that I "have *no* operational explanation for how (my) preferred characterization is consistent with cost causation in any sorting operation activities in any cost pool." Further, the production model that was referred to in question 3b was one that used FHP disaggregated by USPS cost pool as the output variable. That is what I was being asked to consider in the question and I do not consider that specification to be justified for the reasons I gave.

In Roberts (2006). Sections II and III, I develop two complete, internally consistent production models and show how they compare. One model (section III) utilizes the assumptions of separability and proportionality that are made in the USPS framework and relies on "cost drivers" for each operation. The other model (Section II)

# RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIESUSPS/OCA-T1-19-26

does not make these assumptions and relies on the volume of mail in the plant. Whether the more restrictive USPS model is more appropriate as a basis for estimating mail processing costs, depends on whether the separability and proportionality assumptions are true. In OCA-T-1, Section IV. I provide empirical evidence that the proportionality assumption is not true and in USPS/OCA-T1-3c I provide evidence that the separability assumption is not true.

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USPSIOCA-TI-26. Please refer to your response to USPSIOCA-TI-3(d). Considering that you have no operational explanation for how your preferred characterization of sorting output is consistent with cost causation in any sorting activities in any sorting cost pool, on what basis can you conclude that the model modifications you implemented between your March 2006 paper and OCA-T-1 resulted in more plausible results, or otherwise improved your results?

#### **RESPONSE TO USPSIOCA-TI-26**

Please review question USPSIOCA-T1-3d and my response. The question had a specific list of activities and I did not say that I "have no operational *explanation* for how (my) preferred Characterization is consistent with cost causation in any sorting operation activities in any cost pool." Further, the production model that was referred to in question 3b was one that used FHP disaggregated by USPS cost pool as the output variable. That **is** what I was being asked to consider in the question and I do not consider that specification to be justified for the reasons I gave.

There are 4 basic modifications that I made to the model or data used in my March 2006 paper in preparing OCA-T-1. These are summarized in OCA-T-1, Section III, particularly points 2, 3, and 4 and developed in more detail in the paper. First, I changed the sample period by adding 2005 and deleting 1999-2001. See OCA-T-1, Section V.A. for explanation. Second. I extended the model by disaggregated incoming and outgoing FHP each into two groups reflecting !he level of pre-processing. See OCA-T-1, Section V.C for motivation and Section VIII.C for discussion of results. Third. I used the quarterly dummy variables as additional instrumental variables. See OCA-T-1, section VIII and my response to USPS/OCA-T1-12. Fourth. when estimating the labor demand curves for flat sorting operations, I divided the sample into *two* groups

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIES USPSIOCA-TI-19-26

based on whether the AFSM technology was used. See OCA-T-1, Section VIII.D for discussion. The last three changes are all extensions of the model and results in my March 2006 paper. The one that has a significant effect on the results is the last one. In my March 2006 paper, I pointed out that the output elasticity for manual fiat sorting had fallen in magnitude relative to the estimate in Roberts (2002) and that the introduction of the AFSM appeared to be the source of the change. In OCA-T-1 I develop this point in more detail and find that the relationship between manual hours and the volume of flats depends heavily on whether or not the plant uses the AFSM technology. See the discussion and explanation in OCA-T-1. page 49, line 4 to page 50, line 16.

### RESPONSEOFOCAWITNESSROBERTS TO INTERROGATORIESUSPS/OCA-T1-27-34

USPS/OCA-T1-27. Please refer to your response to USPS/OCA-T1-8(b) and USPSIOCA-T1-10.

- (a) Do your calculations in your response to USPS/OCA-T1 -10 reflect your preferred results **as** stated in response to USPS/OCA-T1-8(b)?
- (b) If not, please provide the marginal costs per FHP. requested in USPSIOCA-TI-IO. that reflect your preferred results.
- (c) Please provide the marginal costs per FHP requested in USPS/OCA-T1-10, reflecting your preferred results for letter operations as needed, evaluating your formulas using FY 2005 observations.

#### **RESPONSE TO USPSIOCA-TI-27**

- (a) No, they reflect the results that were specified in question USPS/OCA-T1-
- (b) Question USPS/OCA-T1-10 requested the "marginal time (workhours) per FHP" for the letter and flats operations reported in Tables 3 and 6 of OCA-T-1. Using the formulas in my response to USPSIOCA-TI-10 and my preferred estimates for letters (OCA-T-1, Table 4, Panel B). the marginal workhours, on average, are:

	respect to FHP <sub>IN</sub>	respect to FHP <sub>out</sub>
-Manual Letters	<u> </u>	.300
OCR	.040	.048
Aggregate BCS	.286	.146

# RESPONSE OF OCA WITNESS ROBERTS TO INTERROGATORIES USPS/OCA-T1-27-34

from OCA-T-1, Table **7**, Panel **B**. These were estimated without using quarterly dummy variables as IV's.

Flat Sorting Operation	Marginal Hours with respect to FHP <sub>IN</sub>	Marginal Hours with respect to FHP <sub>OUT</sub>
Manual Flats	042	.777
FSM1000	.060	3.915
AFSM 100	.310	2.553

(c) Using only observations for 2005, the marginal hours for letters by operation, on average, are

Letter Sorting Operation	Marginal Hours with respect to FHP <sub>IN</sub>	Marginal Hours with respect to FHP <sub>OUT</sub>
Manual Letters	_162	.267
OCR	.033	.044
Aggregate BCS	.277	.154

# RESPONSE OF OCA WITNESS ROBERTS TO INTERROGATORIES USPSIOCA-TI-27-34

USPSIOCA-TI-28. Please refer to your response to USPSIOCA-TI-11(a), specifically your discussion of the sample period change between the model presented in your March 2006 paper and the update in USPS-T-12. You note that the results from adding four additional quarters' data from FY 2005 led to results "very similar" to those you previously reported. In your view, is it typical to consider the stability of an econometric model's results with respect to a "fairly small change" in sample size to be a problem as opposed to favorable evidence of the model's robustness? Please explain.

#### **RESPONSE TO USPSIOCA-TI-28**

My point is that adding a small amount of data. then reestimating the same regression equation, and then finding the coefficients are **similar** is not a very demanding way to assess a model's robustness.

### RESPONSEOFOCAWITNESSROBERTS TO INTERROGATORIESUSPS/OCA-T1-27-34

USPS/OCA-T1-29. Please refer to your response to USPSIOCA-TI-11(a), specifically your discussion of the "alternative" capital data.

- (a) Does your response indicate that capital series that eliminate in part the capital timing issue you raised in your March 2006 paper are not preferred to series that exhibit the full anomaly? Please explain.
- (b) Please explain which capital equipment data you used in constructing your capital measures for use in your recommended models. Specifically, did *you* employ the higher-frequency equipment data developed for the Postal Service's "alternative" series, or the lower-frequency data used before your March 2006 paper identified the issue?
- (c) If you indicate that you used the lower-frequency data in response to part (a). please explain your choice in view of your claim that proper matching of the capital and labor input data is important.

#### RESPONSE TO USPS/OCA-T1-29

(a) No, but I don't think the alternative capital series (variables qiXXXalt in the USPS- LR-L-56 data files) address my concern about the timing and merging of the capital data and MODS data. There are still 535 cases where hours in AFSM are positive and the alternative capital variable equals zero (USPS-T-12, Table 27). This is only the most obvious anomaly. We have no idea how frequently the reported capital stocks are positive but lagging behind the actual increase *in* investment. hours, and TPF. I was surprised to learn in USPS-T-12 that the capital variables used in the USPS testimony, which are constituted at the quarterly frequency, are not based on quarterly measurement of capital in use, even though apparently the quarterly data to construct the capital stock variables does exist, at least through 2003. (See USPS-LR-L-56, p.41).

### RESPONSEOFOCAWITNESSROBERTS TO INTERROGATORIESUSPSIOCA-TI-27-34

- (b) I used the EquipmentXXXX.xls data tiles that were provided by the USPS in LR-L-56\Section4\Data. These were the only data files provided that contained the disaggregated capital expenditure that I needed and I thought were the only data tiles that existed. I believe these are the basis for the capital variables used in constructing the estimates in USPS-T-12. The USPS did not provide the "higher frequency" equipment files that were used to construct the 'alternative" capital variables which were used in USPS-T-12, Section VII.G. Even with these, however, the "higher frequency" data is only available through 2003 and so for 2004 and 2005 the 'alternative" capital variables used by the USPS utilize interpolation from beginning and end-of-year values. I also had to interpolate in constructing my capital stock measures for 2004-2005 since this was the only data provided so essentially the same information is being used for my capital stock variables and the "alternative" capital series in these two years.
- (c) It was not a choice. I used the data made available under the belief that this was the best available. I continue to have concerns about the quality of the matching of the capital data and MODS data.

### RESPONSE OF OCA WITNESS ROBERTS TO INTERROGATORIES USPSIOCA-TI-27-34

USPSIOCA-TI-30. Please refer to your response to USPSIOCA-TI-11(a), specifically your discussion of the choice of weights in combining results from cost pools to the shape level. Please also refer to your response to USPS/OCA-T1-13a, where you note that you used FY 2005 weights to aggregate sorting operations to the shape level in OCA-T-1.

- (a) Is modifying the sample period for the weights a technically challenging modification to your Stata code?
- (b) Confirm that FY 2005 observations are within both the samples you employed and those in the longer sample used in the update presented by Dr. Bozo. If you do not confirm. please explain.
- (c) Is it your testimony that FSM **881** was not an important flat sorting technology as of FY 2002, while AFSM 100 deployment was in progress? Please explain.
- (d) Is your judgment that using FY 2005 weights is appropriate for your FY 2002-FY 2005 sample, but not a FY 1999-FY 2005 sample, based on any formal criteria? If so. please explain.
- (e) Did you make any calculations to determine the affect of full-sample versus FY 2005 weights on results from the longer sample period? If so, please describe and provide all calculations you performed.

#### RESPONSE TO USPS/OCA-T1-30

(a) The weighted sums of the elasticities across operations are generated in the program given in OCA-LR-L-1\estimation\seaggelast.do. The year for the weights is chosen in line 18 (keep if fy-==2005;) and this could be changed to any other year.

To aid your exploration of this issue, I am attaching a table of the hours shares by operation for the 304 plants in each year. With this information, the shape elasticities for any year can be constructed on a hand calculator.

# RESPONSEOFOCAWITNESSROBERTS TO INTERROGATORIES USPS/OCA-T1-27-34

Letters

Letters			
<b>f</b> Year	Hours Share Manual	Hours Share OCR	Hour Share BCS
1999	.523	.081	.395
2000	.491	<u>.08</u> 7	.422
2001	.450	.094	.456
2002	.422	.094	.484
2003	.390	.091	.518
2004	.370	.083	.547
2005	.358	.077	.565

### RESPONSEOFOCAWITNESSROBERTS TO INTERROGATORIESUSPS/OCA-T1-27-34

**Flats** 

1 10	***			
Year	Hours Share Manual	Hours Share FSMIOOO	1 OINIOO I	AI OINTOO
1999	.287	,192	.521	0
2000	.275	.211	509	.005
2001	.260	.233	,363	.143
2002	.248	.260	.098	.394
2003	.248	.235	.023	.494
2004	.260	.228	_2 <u>05</u>	.506
2005	.254	.209	 <u>ρ</u>	.537

- (b) Confirmed, but the proportion of sample observations that come from 2005 varies substantially across samples. In the samples I use that cover 2002-2005, approximately 25% of the observations in each sample will be from 2005. In the samples used to estimate flat sorting operations for plants that do not use AFSM (Table 7, Panel D) less than 6% of the observations were from 2005. In contrast, approximately 30% of the observations in these regressions were from 1999 and another 30% were from 2000.
- (c) No, the table in part (a) shows it accounted for 9.8 percent of total hours in 2002.
  - (d) This question misstates my opinion on this issue. Please reread my

### RESPONSEOFOCAWITNESSROBERTS TO INTERROGATORIESUSPS/OCA-T1-27-34

answer to USPS/OCA-T1-13(d) and USPS/OCA-T1-11(a).

(e) No. I used the 2005 weights for virtually all of my results because Dr. Bozo suggested I do this. See USPS-T-12.p. 102, line 4-5. I was trying to reduce the sources of difference between our analyses and felt that this was a fairly trivial issue as long as the weights used to aggregate the operations reflect the mix of operations present in the data used in estimation. From the tables in my answer to part (a) to this question, the hours shares for 2005 reasonably reflect the aggregate shares for the 2002-2005 period used in most of my estimating equations. This is not true for the models I estimated using only the sample of plants that did not use the AFSM technology. In this case, the 2005 weights do not reflect the sample of observations used for estimation. See my answer to part (b) of this question.

### RESPONSE OF OCA WITNESS ROBERTS TO INTERROGATORIESUSPS/OCA-T1-27-34

USPS/OCA-T1-31. Please refer to your response to USPS/OCA-T1-11(a), specifically your discussion of fhe disaggregation of BCS operations into incoming and outgoing components.

- (a) Are you claiming that **the** disaggregation is inappropriate (as opposed to "not. well justified")? If so, on what basis do you support your claim?
- (b) **Is** there any behavior that an aggregated version of your **BCS** model can exhibit that disaggregated versions of your **BCS** models cannot? If you believe so, please explain fully.
- (c) Does your aggregated BCS model relax any restrictions that might be present in disaggregated models? If you believe so, please explain fully.

#### **RESPONSE TO USPSIOCA-11-31**

- (a) No. Texplained this in my original answer. In particular. I said "I think it is possible to develop a coherent model that would treat the outgoing and incoming sorting schemes as separate production processes (whether or not this is appropriate is a different issue), but it would not lead to an estimating model that looks like the one presented in Section VII.G. In particular, all the sorting operations would be divided into incoming and outgoing components with separate labor demands for each. Overall. I found the disaggregation of the BCS operation into separate incoming and outgoing operations to be inconsistent with the rest of the empirical model."
- (b) The problem is not the disaggregation inti, separate incoming and outgoing labor demands, it is the ad hoc way in which this is implemented for one operation while ignoring its implications for the others. This kind of disaggregation is another form of separability that is being imposed on the production process. If this separability assumption is reasonable, then it would lead to disaggregation of all the sorting operations, not just BCS, into incoming and outgoing streams. This then raises a second issue of the appropriate FHP variable to include. If separability is correct then only mail

### RESPONSEOFOCAWITNESSROBERTS TO INTERROGATORIES USPSIOCA-TI-27-34

in the same processing stream should affect labor use. How will local mail that gets its FHP count in the outgoing operation then be accounted for in the incoming operations? Dr. Bozo's discussion does not address these issues which led to my original conclusion that the changes he proposed were not well justified. I am not opposed to more disaggregated versions of the labor demand equations if the assumptions underlying them can be justified and if the more disaggregated data needed to estimate them is satisfactory.

outgoing labor hours is more general than a model that looks only at their sum in the sense that you can potentially estimate a different effect of an increase of mail volume on incoming versus outgoing hours rather than a single effect on total hours. The limitation is always what can be estimated with the data at hand. Exactly this issue of disaggregation comes up in the treatment of the MPBCS and DBCS operations. In this case, Dr. Bozo argues that aggregating the two operations together, "addresses the instability in the MPBCS data related to the gradual withdrawal of the MPBCS equipment from service in factor of DBCS equipmerit" (USPS-T-12. page 6. beginning at line 23). In some cases a precise estimate of the change in the sum of hours might be better than imprecise estimates of the change in each component.

### RESPONSE OF OCA WITNESS ROBERTS TO INTERROGATORIESUSPS/OCA-T1-27-34

USPS/OCA-T1-32. Please refer to your response to USPSIOCA-TI-11(a), specifically your discussion of Dr. Bouo's interpretation of your models. What does Dr. Bozo's interpretation of your results, which you are presumably free to reject as you **see** fit. have to do with your decision not to use his update?

#### **RESPONSE TO USPSIOCA-T1-32**

I do not see anywhere in my answer that I discuss Dr. Bozzo's 'interpretation of your results." In answering the original question, I identified four changes that Dr. Bozzo made when reestimating my model and the conclusions he drew from his new results. I gave my assessment of each of these pieces as I was asked to do

### RESPONSE OF OCA WITNESS ROBERTS TO INTERROGATORIES USPSIOCA-TI-27-34

#### USPSIOCA-T1-33. Please refer to your response to USPS/OCA-T1-18.

- (a) **Do** you agree that mail pieces requiring cancellation have distinct cost-causing characteristics for Postal Service cancellation operations from pieces that do not require cancellation? If you do not agree, please explain your position.
- (b) Does your cancellation model distinguish pieces that require cancellation from pieces that do not require cancellation? If so, please explain in detail how your model purports to do so.
- (c) Please refer to Witness McCrery's testimony, USPS-T-42 at **4.** Witness McCrery notes that a capability *of* AFCS equipment is separation of local from non-local mail.
- (d) Were you familiar with this part of Witness McCrery's testimony?
- (e) Do you agree that local mail may be inducted directly into incoming sorting operations? If not, please explain the basis for your disagreement.
- (f) Please explain how, if at all, your characterization of "output" captures cancelled pieces inducted directly into incoming operations.
- (g) Do you agree that it is possible, in principle, to test whether pieces of mail requiring cancellation and pieces not requiring cancellation can be aggregated for the purposes of estimating a cancellation labor demand equation? If not, why not?
- (h) In the course of developing your cancellation model, did you test whether it is appropriate to aggregate pieces of mail requiring cancellation and pieces not requiring cancellation? If so, please describe fully any test(s) you performed and provide all associated econometric code and output log(s). If not, why not?

#### **RESPONSE TO USPS/OCA-T1-33**

- (a) Yes
- (b) Yes. It recognizes that any letters or flats processed in **the** incoming mail stream do not require cancellation. In the empirical model only mail volume that receives an FHP count in the outgoing operation can affect

### RESPONSE OF OCA WITNESS ROBERTS TO INTERROGATORIESUSPSIOCA-TI-27-34

labor hours in cancellation. That is what the regression coefficients on FHP<sub>OUT</sub> for letters and FHP<sub>OUT</sub> for flats measure.

- (c) Requires no response.
- (d) Yes. Mr. McCrery describes the addition of an OCR upgrade which allows the AFCS to recognize 5 digit zip codes and thus separate local from non-local mail, as a recent upgrade. Although it is hard to tell from the description in R2006-1-T42, page 4, lines 1-23, exactly when the deployment of this upgrade occurred, it appears to be underway during 2005. In R2005-1, T-29. page 4, lines 8-20, Mr. McCreary describes this upgrade as one that is "planned for all AFCS machines." From either description this capability does not appear to be relevant to the sample period being used for estimation in my testimony.
- (e) Yes, but how quickly it is inducted into incoming operations depends on how early in the sorting process it can be identified. I have not seen any testimony or empirical evidence that would suggest how often this happens.
- (f) It does not. If the mail does not receive an FHP count in an outgoing operation it is not included in the output measure. The ability to use the AFCS stage to identify mail that could be directly inducted into incoming operations does not appear to be relevant in the sample period I use for estimation.
  - (q) I do not see any way to do this.
  - (h) No. Ido not see any way to do this.

### RESPONSE **OF** OCA WITNESS ROBERTS TO INTERROGATORIES USPSIOCA-TI-27-34

USPSIOCA-TI-34. Please refer to Tables 5, Panels C and D, in your testimony, OCA-T-1.

- (a) Please update the results you present for the more finely disaggregated FHP variables to reflect your recommended set of instruments as indicated in the response to USPSIOCA-TI-12. or explain why the concerns you raise about instrument selection in that response are inapplicable to the results you presented in Table 5, Panels C and D.
- (b) Please provide the marginal time (workhours) per FHP implicit in each of the reported coefficients on FHP variables for the results you provide in response to part (a). If you do not provide updated results in response to part (a), please use the coefficients originally reported in OCA-T-I . Please show your calculations.

#### **RESPONSE TO USPS/OCA-T1-34**

(a) When I construct the J statistic for the results in models reported in Table 5, Panels C and D, I do not reject the exogeneity of the instruments (which include the quarterly dummies) for the OCR and aggregate BCS operations. I continue to reject the exogeneity for the manual operation, but the values of the test statistics are smaller than those I reported in USPS/OCA-T1-12. The J statistics are:

Letters	Manual	OCR	Aggregate BCS	Critical Values
Letters	Manual			(05. 01
				significance
				level)
			3 92	1107,1509
Eatineale Pamel	77.20	216		
Cable 7, Panel				
Estimates in	15.68	2.56	6.16	9.49, 13.28
Table 7, Panel				
D		<u> </u>		

The test statistic for the manual operation continues to decline as I disaggregate FHP into more categories. This indicates that the quarterly pattern in the residuals from the manual labor demand equation is diminishing as FHP is disaggregated. This suggests

### RESPONSE OF OCA WITNESS ROBERTS TO INTERROGATORIESUSPS/OCA-T1-27-34

to me that the quarterly pattern in the labor hours is reflecting quarterly variation in the different categories of FHP and that the rejection of the exogeneity of the instruments is questionable. For this reason I do not think it is necessary to revise the estimates I present in Table 7, Panel C or D.

(b) The marginal hours are constructed using the formulas in USPS/OCA-T110, except that FHP<sub>IN</sub> is replaced with FHP<sub>IN</sub> automated and FHP<sub>IN</sub> nonautomated.

Similarly for FHP<sub>OUT</sub>. As I disaggregate FHP into these four categories some plants can report small values of FHP in one or more of the categories. This results in large values of marginal hours for these observations because the value of FHP is in the denominator. This happens for a small number of observations in the FHP<sub>IN</sub> nonautomated category and the FHP<sub>OUT</sub> automated catagories. To remove the effect of these outliers on the summary measures of marginal hours, I report the median values over all the observations in the following table. The units are hourslthousand FHP.

Table 7, Panel C estimates	FHP <sub>IN</sub>	FHP <sub>CLIT</sub> nonautomated	FHP <sub>out</sub> automated
Manual	.256	.230	.257
OCR	.033	.022	.093
Aggregate BCS	.248	.201	031

# RESPONSEOFOCAWITNESSROBERTS TO INTERROGATORIES USPSIOCA-TI-27-34

		I		
Manual	-1.629	.489	.210	.035
OCR	095	.052	.018	.064
1		.211		

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIES USPS/OCA-T1-35-44

USPS/OCA-T1-35. Please refer to section II of your testimony, OCA-T-1, and your response to USPS/OCA-T1-3(b).

- a. Please describe the process by which you arrived at the theoretical model(s) underlying your work, and the empirical implementations of them in your 2002 paper, your March 2006 paper, and/or your current testimony. Please describe specifically how you view the roles of the various scrting technologies in the Postal Service's mailstreams and the intermediate output(s) of those technologies. Also, please describe how you weighed operational or engineering relationships between the MODS piece handling measures and workhours at various levels of aggregation with other considerations in empirically specifying the mail processing "output" variables corresponding to your theoretical model, and describe any alternative formulations of your models you considered but have not previously reported. If you estimated any such alternarive models, please summarize the results and explain why you chose not to present the results.
- b. Please identify all other experts that you consulted in the process of developing your theoretical and empirical mail processing models, other than sources cited in your earlier papers or in OCA-T-1.

#### **RESPONSE**

(a) The steps I have taken to devalop my theoretical and empirical models have been well documented in my three papers, two seminar presentations and question-answer sessions at the Postal Rate Commission. All of this material is available at the OCA website <a href="http://www.prc.gov/OCA/OCApapers.htm">http://www.prc.gov/OCA/OCApapers.htm</a>. In particular, see Roberts (2002), Sections II and III and Roberts (2006), Sections II, III, and IV. With respect to the specification of output, I have explained this in writing several times. For the most recent discussion, see Roberts (2006), Section IV.A for discussion of FHP as an output measure and Section IV.B and IV.C for discussion of TPF. A common feature of the models I have developed is that they are designed to measure the plant-level relationship between labor hours and the volume of mail received by the plant for processing. This is what is needed to measure the marginal processing cost of a piece of mail. The plant is viewed

### RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIES USPS/OCA-T1-35-44

as a set of technologies that are used in varying proportions to process the overall volume of mail. Some of the operations are used in sequence, such as when mail moves from OCR to BCS operations. Others, such as manual and BCS, are used as substitutes. The model allows both of these types of interactions. In particular, the model allows for all the pathways outlined in USPS-T-12, Figures 1 and 2. Since I directly rely on plant-level volume data, I recognize that the mix of these operations can depend on the volume of mail handled in the plant. Since I model the plant as an integrated whole, rather than a set of distinct, stand-Elone operations, my model also recognizes that the relationship between mail volume and hours in each operation depends on the whole technology configuration, particularly the type and quantity of capital stocks, in the plant. Intermediate outputs from different sorting operations are not defined or measured and play no role in my analysis. Defining them requires more restrictive assumptions on the technology (see Roberts, Section III, page 17 for a discussion of the role of separability and the correct definition of an intermediate output). More importantly, they are unnecessary for measuring the relationship between the volume of mail received in the plant and the labor hours used in sorting. Over time. I have worked to further refine the measure of mail volume that I use in the analysis. In Roberts (2002) I only separated mail volume by shape. In Roberts (2006) I separated volume by shape and whether it was receiving incoming or outgoing processing. In OCA-T-1 I further separated incoming and outgoing letters into those that could be entered directly into BCS operations. Each of these generalizations allows the estimated relationship between the volume of mail received in the plant and labor hours to be more general. In particular, it recognizes that two pieces will have different marginal costs if they are entered at different points in the sorting stream. My written work and seminar presentations fully document the

# RESPONSE OF OCA WITNESS MARK J. ROBERTS TO INTERROGATORIES USPS/OCA-T1-35-44

development of my thinking and all factors that influenced the choice of my preferred model.

**(b)** I have spoken casually with colleagues in my department at The Pennsylvania State University about general econometric or modeling issues that have come up in the course of my work.

USPS/OCA-T1-36. Please refer to your response to USPS/OCA-T1-3(c). Please explain to what extent the test results you report in your response address the subjects of the separability of capital input, the appropriate level of aggregation of your FHP output measures, and/or your choice of MODS piece handling measure as "output."

#### RESPONSE.

It is unclear in this question what is meant by the "separability of capital input." In my original answer, and the references given there, I explained what these test results imply about the separability of the production process into independent sorting operations. I don't have anything to add to what I have already said. I do not draw any conclusions from the test results regarding the aggregation or use **of** FHP as a measure of output.

USPS/OCA-T1-37. Please refer to your response to USPS/OCA-T1-4. Please also refer to USPS-T-12. Appendix A, especially page 107. lines 11-18, and equation (A5').

- a. Please describe what you believe to be the final output(s) of the Postal Service.
- b. Please explain your understanding of how the Postal Service's final output(s) are measured by the Postal Service's data systems. In particular, please state whether, in your view, MODS FHP handlings represent the fra output(s) of the Postal Service (and, moreover, not of its sorting operations).
- c Please confirm that the elasticity of TPF (or TPH) with respect to ODIS-RPW system volume for a given class, subclass, or rate category (i.e., the number of unique pieces entered by mailers into the postal system) may be decomposed into the product elasticity of TPF (or TPH) with respect to FHP (i.e., "plant's volume"), and the elasticity of FHP with respect to ODIS-RPW system volume. If you do not confirm, please explain fully.
- d. Please confirm that it is not possible to determine the proportionality of TPF (or TPH) and ODIS-RPW system volume solely from elasticities of TPF with respect to FHP. If you do not confirm, please show (in a manner similar to USPS-T-12. Appendix A) how it is possible.
- e. Please confirm that **you** have not estimated elasticities of FHP with respect to RPW volumes. If you do not confirm, please explain fully, describe in detail your methodology, and provide all results, including econometric estimation code and output logs.

#### RESPONSE.

- (a) Pieces of mail delivered.
- (b) As I said my answer to USPS/OCA-T1-24, I have not worked with the ODIS-RPW data and do not know enough about its sampling methodology to comment on how well it measures mail volume in the whole postal system. MODS FHP represents the number of pieces of mail received in a plant. It is the appropriate variable for measuring the relationship between mail volume and labor hours in a processing plant, which is what my model estimates. It is not a measure of the number of pieces

of mail that are delivered, since a piece of mail can receive multiple FHP counts during its processing.

- One difficulty in answering this question is that the verbal description in the question (c) does not match the math that is referenced in lines 11-17. The verbal description refers to FHP as "plant volume" while the math has an i subscript on the FHP variable, Fi, implying that it is the FHP in cost pool i. The latter does not make sense to me, see my answer to USPS/OCA-T1-3(b), but it is hard to know what is intended. More importantly, the multi-step process outlined in equations A3' to A5 is both restrictive and unnecessary. It is restrictive because it is based on a separable production model. All of the steps from cost to cost driver to FHP are unnecessary if we can directly estimate the relationship between labor hours (cost) in an operation and the volume of mail received in the plant. This is exactly the purpose of the empirical model I have developed. Once the relationship between mail volume in the plant and hours is measured and cost **pools** are constructed. there is still a question of distributing the cost pool across rate classes. As I explain in my response to USPS/OCA-T1-24 this can be done by constructing a distribution key that gives the share of each rate class in overall plant mail volume (or the volume of mail in each output category if there are multiple outputs).
- (d) Confirmed, but it is also not necessary to estimate elasticities of TPF with respect to FHP in order to implement the framework I developed.
- (e) Confirmed. In my response to USPS/OCA-T1-24 I explain how to construct a distribution key that could allocate cost pools (defined over output categories) across rate classes.

USPS/OCA-T1-38. Please refer to your testimony, OCA-T-1. at page 18, lines 1-5

- a. Please describe in full the criteria you employed to identify the "64 plants [that] do not report FHP or capital stocks consistently over time."
- b. Please describe in full the criteria you employed to identify "obvious errors" in FHP, "total labor hours," and "the division of labor hours across sorting categories."
- c. With respect to your responses to parts (a) and (b) of this interrogatory, please specify to what extent the level(s) of aggregation at which you screen the Postal Service's data differ from the level(s) at which you analyze the data in your econometric models.
- d. To the extent that your response to part (c) indicates that you screened the data at different level(s) of aggregation from that used in your econometric models, please explain:
  - (i) why the differen! level of screening was necessary (e.g., why aggregation neither corrected nor attenuated the errors with which you were concerned), and
  - (ii) why you consider, given your use of estimation methods that are presumably intended to **be** robust to measurement error and which therefore do not require data which are error-free in all respect, the different level of screening to be necessary.

#### RESPONSE.

(a) My general approach **to** identifying the sample *of* observations I use in the estimation followed 3 steps. First, I identified plants that do not report the most basic necessary output variables: total FHP in letters and flats. I also identified plants that never reported capital stocks in the DBCS or FSM operations. I examined these lists, which have a great deal of overlap in the plants they contain, and eliminated *64* plants that did not report these variables in all years. Often, the FHP variables or capital stock variables were never reported in any year for these plants. I did not use these plants in any of my analysis which left me with the starting group of 304 plants. There is a list of

these plants at the top of the basic data construction program: OCA-LR-L-2\DATA\LABORDEMAND\dataprep304.do

The second step I followed was to look more closely at the disaggregated FHP (b) variables (FHP<sub>IN</sub> and FHP<sub>OUT</sub>) and the data on total labor hours in letters and flats. For each of these variables I expressed each observation as a deviation from the mean of the variable for the same plant. I then examined these plant-mean deviations both graphically and by sorting the variables and printing them. I have found this method to be very effective in identifying quarterly observations that are outliers for a plant. Starting with the largest deviations I then went back to the original plant data and examined the whole time series for that variable and related variables for the plant. For example, if I found an outlier in the total hours in letter sorting, I would look at the reported hours in all of the letter-sorting operations in all years for that plant. In this way I was able to identify outliers for the plants in both the total hours and the hours in individual sorting operations. I also found a number of cases in which the FHP data was not appropriately disaggregated between incoming and outgoing operations. In general, when I found observations that I judged to be outliers for one of these key output or hours variables, I eliminated all the observations for the plant in the same year. This was partly for practical reasons based on the time limits I was working under but also because I did not want the sample to be constantly changing based on the sorting operation or level of aggregation (i.e number of outputs) I was using. This process of identifying outliers is tedious and time consuming and I did it interactively while working at the computer. I kept a record of my decisions and have included a complete list of all observations that were eliminated as a result of this process in the beginning of all the estimation programs in OCA-LR-L-2\ESTIMATION.

The third step in the sample selection process involves some computer screening of the data. Hours or output variables that are zero are eliminated automatically when logs are taken. I also eliminate observations that have TPF or hours in an operation that are reported to be positive while capital stocks in the operation are zero. This will lead to differences in the number of available observations across regressions and I try to keep this kind of autonomous sample selection to a minimum.

- (c) In general I have screened the data at the level at which the primary models are estimated, labor nours by sorting operation and FHP divided into incoming and outgoing operations.
- (d)(i)-(ii) See my answer to part (c). It should be noted, however, that the use of IV estimation methods that are **robust** to measurement error of an explanatory variable *is* not a substitute for correcting or eliminating errors in either the explanatory or dependent variables in a regression.

USPS/OCA-T1-39. Please refer to your testimony, OCA-T-1, at page 18, lines 20-21. Please explain what you mean by "...different data collection system for part of the time period."

#### **RESPONSE**

In the data file site\_type\_coded.xls that I received from the USPS (and which is included as a Stata dataset in OCA-LR-L-2\DATA\LABORDEMAND\site\_type\_coded.dta) had one variable (c7 in the Stata dataset) that identified nine different designations for the processing plants that were included in the USPS-LR-L-56data sets. One of these types was "MD2." I asked the Fostal Service for an explanation of this and the answer I received is "MD2 is an obsolete designation going back to the days when there was data processing distinction between PC-MODS (aka MOD 2 facilities) and PSDS (mainframe) MODS." When I examined the MODS data I found that, of the observations identified as MD2 facilities, 345% (560 out of 1624 observations) did not report FHP. In contrast, the observations labeled as P&D did not report FHP for only 4% of the observations (280 out of 6916). As one sensitivity check for the letters models, I deleted all observations for the facilities identified as MD2. The results are reported in OCA-T-1. Table 4, Panel D.

USPS/OCA-T1-40. Please refer to your testimony, OCA-T-1, at page 20, lines 17-22, where you discuss criticism of your model concerning "its ability to account for differences in the depth of sorting undertaken in the plant." You note that "[t]here is not a conceptual problem with the definition of output." Do you agree that the practical problem is what data best correspond to the conceptual definition of output? If not, please explain.

#### **RESPONSE:**

I have discussed this issue at length in my papers. See OCA-T-1, Section V.C. Also, see Roberts (2006). Section IV for a complete discussion of the practical issues involved in measuring the volume of mail in the plant

USPS/OCA-T1-41. Please refer to your testimony, OCA-T-1, at page 27, lines 14-23. Please also refer to Prof. William Greene's testimony from Docket No. R2000-1, USPS-RT-7, at page 5 (line 27) to pags 6 (line 9). Prof Greene stated:

The intervenors in [Docket No. R2000-1] have thrown up an array of criticisms of the data set that raise a standard that could never be met. Apparently, the MODS data were not created for the purpose for which they were used in this proceeding. But that is usually the case with large micro level data sets. Nonetheless, it does seem reasonable to assert that there is useful information in the MODS data for the determination of volume variability. I would suggest that the Commission take the view that researchers should extract from these data what useful information they contain, not go to great lengths to discredit the data, and then discard them and the analysis based on them. Do you agree with Prof. Greene? If not, please explain in detail why not.

#### **RESPONSE**

I do not know specifically what is contained in the array of criticisms that Dr.

Greene refers to so J cannot comment on the first sentence of the quote. I agree with the part of his comment that reads "Apparently, the MODS data were not created for the purpose for which they were used in this proceeding. But that is usually the case with large micro level data sets. Nonetheless, it does seem reasonable to assert that there is useful information in the MODS data for the determination of volume variability. I would suggest that the Commission take the view that researchers should extract from these data what useful information they contain...." I do not have a problem with intervenors questioning and criticizing the data. That is part of the process that is necessary to uncover the strengths and weaknesses of the data

USPS/OCA-T1-42. Please refer to your testimony at page 27, lines 19-23. where you mention your use of plant fixed effects in your recommended models. Please also refer to Prof. William Greene's testimonyfrom Docket No. **R2000-1**, USPS-RT-7, at page 5 (lines 1-4). Prof. Greene stated:

The Commission should have taken a much more favorable view [of the fixed effects model] in 1997, and should at this time consider the panel data, fixed effects form of econometric analysis an appropriate platform for continuing work on developing a model for mail processing costs.

- a Do you agree with Prof. Greene? If not, please explain in detail why not.
- b. Please see also Dr. Bozo's response in this proceeding to POIR No. 10, question 6. (Tr. 10/2487-88). Is it your opinion that the "time-series variation within each plant" is the variation of greatest interest for mail processing labor demand analysis? If not, please explain fully why your opinion has changed.
- c Please confirm that if "plant fixed effects" are present, but an otherwise appropriate econometric model fails to control for them, the results of that model generally will be biased. If you do not confirm. please explain.

#### RESPONSE

- (a) Yes.
- (b) I believe it is the variation of greatest usefulness for estimating the short-run (capital stocks fixed) labor demand elasticities that have been the focus of my analysis.
- (c) This statement is too vague for **me** to confirm. The presence of bias will depend on the correlation between the omitted plant dummies and the included variables in the model. Some regression coefficients may be biased while others are unaffected. Also the magnitude of the bias will depend on the strength of the correlation between the omitted and included variables. If the correlation is weak the bias can be small.

USPS/OCA-T1-43. Please refer to item (c) in your response to USPS/OCA-T1-9. You note that your tests "rejected the exogeneity condition in 9 of 13 sorting operations."

- a. Table 1 reports elasticities for eleven sorting operations. Please identify the other two operations and provide all available Table 1 elasticities for those operations.
- b. For each of the thirteen sorting operations you tested using your variations on the Postal Service models, please provide:
  - (i) The output elasticities from the non-instrumental variables models against which you tested,
  - (ii) The values of the test statistics, the corresponding p-values. and the critical p-value on which your statement is based.
- c. Please provide all econometric code and output log(s) for the material you provide in response to parts (a) and (b). or please indicate where the material is provided in OCA-LR-2.

#### RESPONSE.

- (a) I am referring to the results in my 2002 paper, Section VII.D. Table 13 in that paper is the relevant one and it contains 13 sorting operations. The discussion of the results of the exogeneity test begins on the bottom of page 82 and continues on page 83
- (b) (i)-(ii)Table 13 provides instrumented and non-instrumented parameter estimates

  The test statistics for the exogeneity test is one of the few sets of results I did not report in the paper. The following table gives the Hausman test statistic (it is a t-statistic in this case) for the hypothesis that TPF is an exogenous variable. A large absolute value of the test statistic (low P-value) implies reject that TPF is exogenous

Operation	First Difference - IV	Fixed Effects - IV estimator
	estimator	
Manual flats	-9.28 (.000)	3.60 (.000)
FSM-all	-4.92 (.000)	3.11 (.002)
FSM 881	-5.89 (.000)	10.87 (.000)
FSMIOOO	-1.09 (.276)	2.14 (.032)
Manual letters	-7.82 (.000)	7.54 (.000)
LSM	-2.17(.030)	1.58 (.115)
OCR	-5.96 (.000)	4.78 (.000)
BCS - all	-8.04 (.000)	7.21 (.000)
BCS	8.62 (.000)	0.25 (.801)
, DBCS	-6.91 (.000)	4.67 (.000)
Manual Parcel	-1.65 (.099)	0.28 (.781)
SPBS	-0.90 (.369)	4.46 (.000)
Manual Priority	-3.00 (.003)	3.64 (.000)

(c) These results are all available with the documentation 1 provided for my 2002 paper. It is on the OCA website at <a href="http://www.prc.gov/OCA/OCApapers.htm">http://www.prc.gov/OCA/OCApapers.htm</a>. The program and log files with all the results for table 13 are outputtpf.do and outputtpf log

USPS/OCA-T1-44. Please refer Io item (d) in your response to USPS/OCA-T1-9. You note that you omitted quarterly dummy variables from your versions of the Postal Service models because "There is no evidence in the operational testimony that the methods used to sort the mail in an operation vary by quarter of the year."

- a. Notwithstanding the absence of mention in the operational testimony, did you consider the possibility, or probability, of seasonal variations in staffing patterns and/or mail mix, before eliminating the quarterly dummy variables? If not, why not?
- b. Did you test the significance of the coefficients on the quarterly dummy variables before eliminating them from the models you estimated? If **so**, please provide all results of the tests. the econometric code. and related output log(s). If not, why not?

#### **RESPONSE:**

- (a) This role of quarterly variation in the data and how it should **be** utilized **is** discussed at length in Roberts (2006). Section V.E. While I could not find any operational testimony relevant to this point, I did speculate about the possibility of a changing mix of part-time and full-time workers that might affect the quality of the plant's workforce as one source of quarterly variation in the demand equations. When deciding how to specify the labor demand models, this possibility must be weighed against the certainty that the quarterly variation in mail volume is large and the major source of information available to estimate the output elasticities. This is one of the points I explain in Section V.E.
- (b) I did not do this test in preparing OCA-T-I. For the reasons that I explained in Roberts (2006). Section V.E, I felt that it was most appropriate to model the quarterly variation in hours as arising from quarterly variation in mail volume. In Roberts (2006). Table 8, I present estimates from models that use quarterly dummies. In Section V.E, these estimates are discussed and contrasted with the corresponding estimates from models without quarterly dummies in Tables 4 and 5.

The log file for the regressions in Table 8 is available in the documentation provided for that paper on the OCA weh site (file name: finalestq.log). The log file contains the estimates for the quarterly dummy variables and they are almost always statistically significant. Any test that the coefficients on the quarterly dummies were jointly equal to zero would be rejected. However, the magnitudes are so large that it is impossible to believe they are measuring quarterly shifts in the technology, after controlling for output variation. For example, the quarterly dummies in the manual labor demand for letter sorting indicate that, relative to the first quarter, 2<sup>nd</sup> quarter labor demand is 5.9 percent higher and 4" quarter labor demand is 10.8 percent lower, a 16.7 percent swing in labor demand from the 2<sup>nd</sup> to 4<sup>th</sup> quarter. Similar swings in magnitude based on the quarterly dummies are observed for the other major sorting operations. DBCS hours rise 15.0 percent between the 1st and 4th quarter, manual flat sorting hours fall 13.9 percent from the 1st to 4th quarter. while AFSM hours rise 12.0 percent in the 2<sup>nd</sup> quarter relative to the 3<sup>rd</sup> and 4<sup>th</sup>. These are large variations in labor hours that are almost certainly reflecting the quarterly variation in mail volume, not quarterly changes in the technology, such as a changing mix of full and part time workers, after controlling for the volume of mail in the plant. For the reasons I have enumerated, I believe it is appropriate to model the labor demand curves without including quarterly dummies and rather to exploit the quarterly variation in mail volume lo estimate the elasticities of labor hours.

USPSIOCA-T1-45. Please refer to your response to USPS/OCA-T1-14(b). That question sought information on the composition of your FHP measures by cost pool—i.e., "manual letters, OCR, aggregate BCS, manual flats, FSM 1000, and AFSM 100"—not by presort level. Please also refer to your response to USPSIOCA-T1-2, where you agreed that the cost of sorting a piece of mail in the Postal Service's automation mailstream is lower than that of sorting an otherwise identical piece in the Postal Service's manual mailstream.

- (a) Please refer to your description of mapsfinal.dta in OCA-LR-2, file description.pdf. Please confirm that the "K56" variable identifies the cost pools enumerated in USPS/OCA-T1 -14(b). If you do not confirm, please explain.
- (b) Please confirm that the groups you list in response to USPS/OCA-T1-14(b) do not provide a one-to-one correspondence to the cost pools listed above and in USPS/OCA-T1-14(b). If you do not confirm, please provide a crosswalk of your categories to cost pool.
- (c) Please confirm that using the "K56" variable, it is possible to disaggregate your FHP measures to the cost pools listed above and in **USPS/OCA-T1-14(b)**. If you **do** not confirm, please explain.
- (d) If your response to part (c) confirms that producing the disaggregated FHP by cost pool is possible, please provide the disaggregated FHP data by cost pool requested in USPS/OCA-T1-14(b).
- (e) Are the shares of outgoing letter FHP in categories 111-114 you present in response to USPS/OCA-T1-14(b) intended to fully partition outgoing letter FHP? If not, why not?
- (f) Please explain to which of group(s) 111-114 you assign outgoing manual letter FHP.

#### RESPONSE TO USPS/OCA-T1-45

- (a) The K56 variable corresponds to the MODS operations groups listed in USPS-LR-L56, p. 23 and 24. It is constructed directly from two variables (operation and Wgroup) supplied in USPS-LR-L-56\Section4\Data\oper-grp-maps.xls.
- (b) Confirmed. Both groups aggregate over the threedigit MODS operations but in different ways.

(c) One problem is that the data in oper-grp-maps.xls does not assign the 22 three-digit MODS operations in the OCR group (K56=4) to incoming and outgoing operations. If you allow me to assign these categories then I can do the aggregation you request. I will assign MODS operations 046, 831,832,841,842,881, and 882 to outgoing OCR and the remaining 15 operations to incoming OCR.

(d) Incoming Letters

Year:qtr	FHPIN	Share Manual Labor	Share OCR	Share Aggregate BCS
1999:1	25263	.089	,069	.841
2000.1	26837	.077	.062	.861
2001:1	28225	.064	,058	.878
2002 1	27173	.053	.050	.896
2003 1	27316	.042	.044	.914
2004 1	27432	.036	.040	.924
2005 1	28153	.030	.037	.933

**Outgoing Letters** 

Year:qtr	FHPOUT	Share Manual Labor	Share OCR	Share Aggregate BCS
1999:1	13327	.094	.483	.420
2000:1	13421	.092	.471	.437
2001:1	13203	.078	.420	.503
2002:1	12349	.068	.383	.549
2003:1	11919	.058	386	.556
2004:1	11552	.054	.375	.571
2005:1	109057	.050	.346	.604

Year:qtr	FHP <sub>IN</sub>	Share Manual Labor	Share FSM881	Share FSMI 000	Share <b>AFSM</b>
2000:1	4855	.206	.622	.171	.000
2001:1	5085	.188	,480	.147	.186
2002:1	5071	.115	.130	.088	.667
2003:1	5376	.076	.021	.071	.832
2004:1	5400	.063	.008	.085	.843
2005:1	5461	.057	.000	.086	.857

Year:qtr	FHPOUT	Share Manual Labor	Share FSM881	Share FSMI000	Share AFSM
1999:1	1132	.087	.700	.214	.000
2000:1	1151	.093	.698	.208	.000
2001:1	1131	.091	.467	.205	.238
2002:1	1023	.065	.104	.154	.677
2003:1	999	:055	.015	.107	.823
2004:1	938	.055	.006	.117	.822
2005:1	927	.059	.000	.105	.836

- (e) Yes. The categories account for all outgoing letter FHP.
- (f) MODS category 30 (Manual letters. outgoing primary) **is** assigned to presort category 111. MODS category 40 (Manual letters, outgoing secondary) is assigned to presort category 112. The link between each MODS category and each presort category **is** given in the data set OCA-LR-L-2\DATA\FHP\mapsfinal.dta.

USPSIOCA-TI-46. Please refer to your response to USPS/OCA-T1-15.

- (a) Does the 0.079 R-squared from your OCA-T-1 "base model" suggest to you that your model specification may be failing to include major factor(s) that explain manual flats workhours? If not, why not?
- (b) Do the lower R-squared and/or higher standard errors of the output elasticities you confirm in response to USPS/OCA-T1-15(e)-(f) indicate that your flats model developments did not improve your results? If *not*, why not?
- (c) Please compare the R-squared of the manual flats "base model" with that of the manual flats models from your "USPS Model" implementation, reported in Table 1 of OCA-T-1. Please provide output log(s) to support your answer, or indicate where in OCA-LR-2 the results may be found.

#### RESPONSE TO USPS/OCA-T1-46

(a) Using the R² to draw inferences about model specification is inappropriate. A low R² does not imply that the model is bad or that there are omitted variables. Nor does a high R² imply that the model is correctly specified or that the results are not spurious. In his textbook. A Course in Econometrics. Arthur Goldberger states. "In fact the most important thing about R² is that it is not important in the CR (classical regression) model. The CR model is concerned with parameters in a population, not with goodness of fit in the sample' (p. 177). The empirical model of mail processing that I have developed is focused on providing consistent estimates of the parameters of the labor demand function. It is also the case that one has to be careful about the definition of the R² in panel data models. The value reported for my regressions is the square of the simple correlation between the dependent variable and the fitted value of the regression, where the latter is constructed without using the plant fixed effect. This is what the STATA computer software reports as the "overall R²" for the regression. If instead we include the plant fixed effect in the fitted value of the regression the squared correlation between actual and fitted

- values would increase to .846 in this regression. In either case, drawing conclusions about model specification on the basis of summary statistics like this is not justified.
- (b) This is basically the same model I estimated in my early papers. What is different is the sample of data used. In the results from OCA-T-1 that are referenced in USPS/OCA-T1-15, the eslimation is limited to plants that have the AFSM operation in place. The results that are referenced from Roberts (2006) included observations from 1999-2004 and included plants both with and without the AFSM technology. The reduction in sample size alone will result in higher standard errors for the coefficients in OCA-T-1. The conclusions that I draw from these results are discussed in OCA-T-1, p.49, line 4 to p.50, line 16.
- (c) The overall R<sup>2</sup> from the base model is .079 as discussed in the answer to part (a). The R<sup>2</sup> from the Table 1 models are .012 for the plants with AFSM and .345 for plants without AFSM. These results are reported OCA-LR-2\ESTIMATION in the log files threestep.log at line 781 and 3stepnoafsm.log at line 223. Neither of these numbers include the plant fixed effects in the calculation of the fitted value as explained in my answer to part (a). I cannot see any reason to compare these numbers and cannot offer any conclusions from them.

USPS/OCA-T1-47. Please refer to your response to USPSIOCA-TI-15.

- (a) Does the 0.333 R-squared from your OCA-T-1 "base model" suggest to you that your model specification may be failing to include major factor(s) that explain FSM 1000 workhours? If not, why not?
- (b) Do the lower R-squared and/or higher standard errors of the output elasticities you confirm in response to USPS/OCA-T1-15(e)-(f) indicate that your flats model developments did not improve your results? If not, why not?
- (c) Please compare the R-squared of the FSM 1000 "base model" with that of the FSM 1000 models from your "USPS Model" implementation, reported in Table 1 of OCA-T-1. Please provide output og(s) to support your answer, or indicate where in OCA-LR-2 the results may be found.

#### RESPONSE TO USPSIOCA-T'i-47

lassume this question is referring to my answer to USPS/OCA-T1-16, not T1-15.

- (a) Please see my answer to USPS/OCA-T1-46. In this case, the R<sup>2</sup> for the regression, if the plant fixed effect were included in the fitted value of the demand equation, is .669.
- (b) Please see my answer to USPSIOCA-TI-46. Since this and the previous question are trying to base inferences on R<sup>2</sup> comparisons in the manual and FSM1000 operations, for completeness it is appropriate to recognize that the AFSM operation is also part of the same model. In the OCA-T-1 base model (Table 7), the corresponding R<sup>2</sup> for the AFSM demand equation is .856. The corresponding figure from Roberts (2006) Table 5, is .884.
- (c) The overall R<sup>2</sup> from the base model is .333. The R<sup>2</sup> from the Table 1 models are .343 for the plants with AFSM and .465 for plants without AFSM. These results are reported in OCA-LR-2\ESTIMATION in the log files threestep.log at line 902 and 3stepnoafsm.log at line 475. Neither of these numbers include the plant fixed effects in the calculation of the fitted value as explained in my answer

to part (a). I cannot see any reason to compare these numbers and cannot offer any conclusions from them.

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	MR. COSTICH: Mr. Chairman, one more of my
neglected	points.
	I would move the admission of Professor
Roberts'	library reference.
	CHAIRMAN OMAS: I thought we did that, but
anyway wit	thout objection. So ordered.
	This brings us to oral cross-examination.
One partio	cipant has requested oral cross. That would
be the Uni	ited States Postal Service.
	Mr. Heselton, you may begin.'
	MR. HESELTON: Thank you, Mr. Chairman.
	CROSS-EXAMINATION
	BY MR. HESELTON:
Q	Good morning, Professor Roberts.
A	Good morning.
Q	I'd like you to turn to your response to
Postal Ser	rvice Interrogatory 35.
Α	Okay.
Q	And specifically there to the second page
beginning	four lines from the top
A	All right.
Q	There you state
	CHAIRMAN OMAS: Excuse me. Let me
interrupt	
	Mr. Roberts, would you push the mic a little
	Roberts' I

1	closer toward you? It will pick it up, but you need
2	to speak a little bit louder so that the reporter can
3	pick you up.
4	BY MR, HESELTON:
5	Q Professor Roberts, I'm focused there on the
6	sentence that begins, "In particular, the model allows
7	for all the pathways outlined in USPS-T-12, Figures 1
8	and 2." Is that correct? I've quoted that correctly?
9	A I'm sorry. I don't see where you're looking
10	at. You said the second page?
11	Q Yes.
12	A Question 35(a)?
13	Q 35(a) and your response there, the fourth
14	line beginning, "In particular"
15	A Yes, I see it. Isn't that the third line?
16	I see the sentence. "In particular, the model allows
17	for all the pathways outlined" Yes.
18	MR. HESELTON: That's correct. That's the
19	portion that I'm referring to.
20	(The document referred to was
21	marked for identification as
22	Exhibit No. USPS/OCA-T1-XE-
23	1.)
24	BY MR. HESELTON:
25	Q Now, the Postal Service filed a cross-
	Heritage Reporting Corporation (202) 628-4888

8390

- 1 examination exhibit for you with a stylized mail flow
- diagram labeled USPS/OCA-T1-XE-1. Have you had a
- 3 chance to examine that?
- 4 A Yes, I have.
- 5 Q Do you recognize this as a version of
- 6 Figure 1 from Dr. Bozzo's testimony which you
- 7 reference in your response to this interrogatory?
- 8 A Yes, I do.
- 9 O Some additional labels have been added? Is
- 10 that correct?
- 11 A Yes.
- 12 MR, HESELTON: Let me pause here while the
- 13 Commissioners receive a copy of this exhibit.
- 14 BY MR. YESELTON:
- 15 O Now, is this diagram consistent with your
- 16 understanding of mail flows in the letter-shaped mail
- 17 stream?
- 18 A Yes, it is. I mean, it's a stylized
- 19 description, but yes.
- 20 Q Next, please turn to page 41 of your
- 21 testimony.
- A All right.
- 23 O Now, that's a section headed Letter Sorting
- Operations with Additional Outputs, is it not?
- 25 A Correct.

1	Q I would like you to particularly focus on
2	lines 2 to 6 and specifically the language that
3	follows:
4	"The disaggregation of total plant first
5	handling pieces," and you say FHP there, but in the
6	course of my conversation this morning I'm going to
7	try and convert. all these pesky Postal acronyms into
8	words that we can understand, "in the incoming and
9	outgoing stages captures the two categories of output
1 0	with the most substantial difference in the mix of
11	labor hours used and sorting."
12	Have I quoted that correctly?
13	A Yes, you have.
14	<b>Q</b> Now I'd like you to consider your two output
15	base model for letter work hours. Specifically is it
16	correct that the letter first handling piece that you
17	use in those models are aggregated such that they do
18	not specifically identify any of the pathways shown in
19	the exhibit now before you?
20	f A What they measure is what's coming in the
2 1	let me look back at the picture. What they are
22	measuring is the entry point for each of these
23	different types of mail. That's what I'm measuring
24	with my first handled pieces.
25	Q Yes. And you're not at this point anyway
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7	dealing with the pathways that are indicated in
2	Exhibit 1?
3	f A No. What the model is estimating is it's
4	producing estimates of the link between the FMP at the
5	different entry points and the use of hours in each of
6	the sorting operations.
7	What's being estimated by the model is the
8	link between first handled pieces at their entry point
9	and subsequent hours in all these sorting operations,
10	so it's estimating the link, the link between first
11	handled pieces and hours represented by these
12	pathways.
13	Q Okay. Now if you would consider your letter
14	models with additional outputs discussed in this
15	section?
16	Is it correct that those models split the
17	outgoing and incoming first handling pieces into
18	pieces, basically into two groups? The two are first
19	handled in barcode sorting operations, which you call
20	automation first handling pieces, and other first
2 1	handling pieces, which you collectively term
22	nonautomation first handling pieces. Is that correct?
23	A That's correct, yes.
24	Q And on the figure we have labeled several of
25	the pathways in accord with our understanding of how

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1 you constituted your groups, and we'd like you to

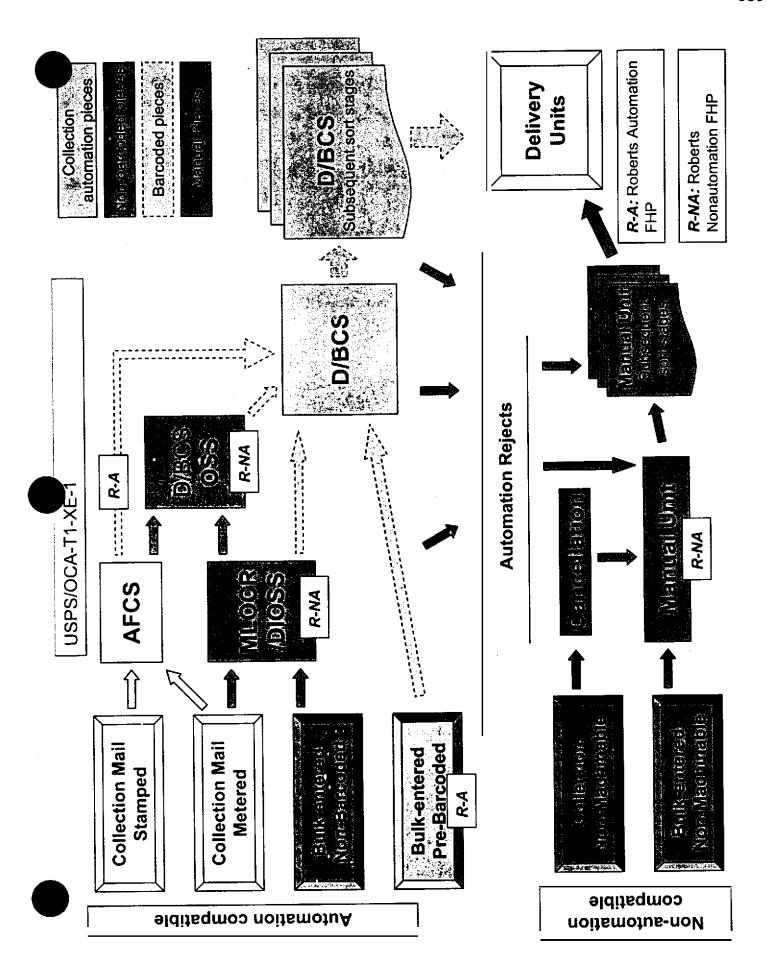
- 2 confirm that we have accurately characterized them.
- 3 A The one pathway, the one that I have
- 4 difficulty with, is down at the bottom where you have
- 5 Manual Unit and vou have RNA as if I'm counting the
- first handled -- I'm counting all the mail somehow
- 7 that's in that manual unit.
- 8 The RNA only represents the flow of mail
- 9 which is first handled in the manual unit. In
- particular, it does not count all of these pathways
- that come down as automation rejects. You have a long
- 12 green arrow there that says Automation Rejects, and
- it's flowing into the manual unit. That is not
- 14 counted as part of RNA.
- 15 O Professor Roberts, with that clarification
- do you agree that Exhibit 1 is an appropriate
- 17 representation?
- 18 A Yes, I think it is.
- MR. HESELTON: Okay. With that, Mr.
- 20 Chairman, I would like to move the document entitled
- 21 USPS/OCA-T1-XE-1 into evidence and have it transcribed
- in the record.
- 23 CHAIRMAN OMAS: Without objection. So
- 24 ordered.
- 25 //

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1		(The document referred to,
2		previously identified as
3		Exhibit No. USPS/OCA-T1-XE-1,
4		was received in evidence.)
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1	BY MR. HESELTON:
2	Q Professor Roberts, I'd like you to refer to
3	your response to Postal Service Interrogatory 3(b).
4	A 3(b)?
5	CHAIRMAN OMAS: Excuse me. Mr. Heselton, I
6	would like to take this opportunity before you start
7	the next round of questioning to thank you and the
8	Postal Service for filing this on line so that we were
9	able to see it before we came in today and we were
0	able to follow you in your cross-examination. We do
11	thank you very much for that.
12	MR. KESELTON: You're welcome, Mr. Chairman.
. 3	BY MR. HESELTON:
4	Now looking at your response to
5	Interrogatory 3(b), Professor Roberts, you say that
16	you "have not estimated a model that disaggregates
17	first handling pieces by USPS cost pools." Is that
8	correct?
19	A That's correct.
20	Q Let me represent that the question meant
2 1	cost pool in a more generic sense of a collection of
22	MODS operations, so isn't it correct that your
23	disaggregated first handling piece models that you are
24	forming or attempting to form are what we might call
25	volume pools based on a collection of MODS operations

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Т.	where the first handling pieces have similar
2	characteristics? Is that a correct characterization?
3	A That's closer. I certainly would not I
4	object to the use of cost pools in this. Cost pools
5	has a very specific connotation I think in these
6	proceedings referring to sorting operations, and I do
7	not disaggregate first handled pieces by sorting
8	operations. I don't think that's an appropriate way
9	to proceed.
10	I do disaggregate first handled pieces by
11	characteristics that attempt to reflect the amount of
12	presorting or differences in shape and the amount of
13	presorting and ultimate final sorting that they would
14	have to undergo. That's what led me to disaggregate
15	them into incoming and outgoing and then further to
16	disaggregate letters into the categories you've talked
17	about here.
18	${\tt Q}$ Okay. Let me focus for a second here on the
19	word "volume". Is it possible at least in principle
20	that the labor demand model for a particular
21	operation, that some of those volumes may prove to be
22	irrelevant in the sense that they have no significant
23	effect on work hours?
24	A That's certainly possible, and that's
25	allowed for in the empirical model.

1	Q Now please turn to your response to Postal			
2	Service Interrogatory No. 1. We asked you there if			
3	you agreed that automation compatible and			
4	nonmachineable letter shaped pieces had different cost			
5	causing characteristics.			
6	Here I'm using the term nonmachineable to			
7	mean not automation compatible because it has a few			
8	less syllables, and I'm more likely to pronounce it			
9	correctly.			
10	Your response was yes, correct?			
11	A Yes, it is.			
12	Q And you suggested this was one reason for			
13	your analysis using first handling pieces			
14	disaggregated by processing characteristics. Is that			
15	correct?			
16	A Yes			
17	Q While Interrogatory No. 1 specifically			
18	referenced letters, would your response be generally			
19	true of flats too?			
20	A Yes, it would.			
21	Q Let's go back to letters. At what point in			
22	your examination of mail processing costs had you			
23	first considered the existence of these differences in			
24	cost causing characteristics?			
25	A This goes back to my earliest work on this.			

ľ	Q So you would be talking about your 2002			
2	paper?			
3	A The 2002 paper. The issue came up I			
4	remember when 1 presented the seminar. It came up in			
5	questions at the end. I discussed it there.			
6	Q Now would you please turn to your			
7	Interrogatory No. 2? Do you have that?			
8	A Yes. Yes, I do. Sorry.			
9	9 We asked you there if you further agreed			
10	that the cost of sorting automation compatible letters			
11	was lower than the cost of sorting otherwise identical			
12	letters in the manual mail stream.			
13	Again your response was that you agreed, and			
14	again you pointed to your analysis using disaggregated			
15	first handling pieces. You indicated that question			
16	was whether the cost difference could be reliably			
17	measured. Is that a fair summary?			
18	A Yes, it is.			
19	Q Now, what's your understanding of the			
20	relative productivities, and by that I mean pieces per			
21	work hour, of manual and automated sorting operations?			
22	A I understand that the pieces per hour that			
23	can be handled in automated operations is much larger			
24	than in manual operations.			
25	Q Is it your understanding that letter			
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1	automation	productivities	are	typically	าท	the
_	OLO COLLO CE CEL	PECAGOCETECE	<u> </u>			

- thousands of pieces per work hour?
- 3 A You're defining productivity as pieces
- 4 handled in the operation?
- 5 Q Pieces per work hour.
- 6 A Okay. If it's pieces of mail that's moving
- 7 through the machinery, yes.
- 8 Q Okay. And in terms of letter productivities
- 9 in manual operations, are they more likely in the
- 10 hundreds of pieces per work hour?
- 11 A Yes, I believe that's the right order of
- 12 magnitude.
- 13 O And so it stands to reason that the cost
- difference we're talking about here is a pretty large
- 15 multiple, something like a factor of 10 or so in terms
- of the difference between these two operations?
- 17 A For moving one piece, yes.
- 18 Q Is the failure to reliably measure such a
- large effect part of the reason why you don't
- recommend any of the models that you cite in response
- 21 to Interrogatories 1 and 2?
- 22 A Which are the models that I don't recommend
- in citing 1 and 2? Could you repeat the question?
- Q Okay. Let me repeat the question. Here I'm
- 25 talking about the additional output models. My

Т	question is is the failure to reliably measure such a				
2	large effect part of the reason that you don't				
3	recommend any of the models you cite in response to				
4	Interrogatories 1 and 2?				
5	A The reason I don't recommend the				
6	disaggregated models, which is not specifically				
7	that's not all that I'm referring to. That's not				
8	specifically what's being referred to in 1 and 2.				
9	The reason I don't recommend the				
10	disaggregated models is that I felt that the				
11	statistical estimates were very imprecise that				
12	underlie those models.				
<b>1</b> 3	There's a table in the testimony which gives				
14	the coefficients and the standard errors, and that's				
15	what I was basing my judgment on.				
16	Q Do you think your results reflect something				
17	wrong with your disaggregated model?				
18	A I think they reflect the difficulty in using				
19	this data to precisely estimate the link between very				
20	disaggregated or fairly disaggregated categories of				
21	mail volume and the hours that are used in the plan.				
22	Q At least the way that you have modeled them.				
23	Is that correct?				
24	A Certainly using my model, yes				
25	Q Could you turn to your Interrogatory No. 8?				
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- Here I'm looking at your response specifically to
- 2 Section (b).
- 3 For letter operations you do have a set of
- 4 recommended results listed in that response. Is that
- 5 correct?
- 6 A That's correct.
- 7 Q Could you use your recommended letter-shaped
- 8 models to measure a marginal cost difference between
- 9 pieces in the manual and pieces in the automation mail
- 10 streams?
- A No, you cannot.
- 12 Q Now I'd like to explore your understanding
- of the distinction or distinctions between letter-
- shaped pieces that are not prebarcoded and letters
- that are not machineable.
- Do you agree that a letter that is not
- 17 prebarcoded may in fact be automation compatible?
- 18 A Yes, I do.
- 19 O Does the figure in Exhibit 1 depict your
- 20 understanding of how the Postal Service handles
- automation compatible pieces that require barcoding?
- 22 A In which the Postal Service has to apply the
- barcode you're saying? Which enter without barcodes?
- 24 Q Essentially, yes.
- A Yes, it does.

Τ	Q Basically what I'm looking for here is that
2	you're aware that the Postal Service tries to put a
3	barcode on such a piece in the optical character
4	reader or the input subsystem/output subsystem remote
5	encoding operation?
6	A Yes, I agree.
7	Q And for those pieces the Postal Service
8	successfully barcodes, the first handling pieces would
9	be recorded in the optical character reader, the input
10	subsystem or the output subsystem operations. Is that
11	correct?
12	A Yes, as I understand it.
13	Q Okay. Is it your understanding that once
14	barcoded those automation compatible pieces flow to
15	the barcode sorting operation and are handled along
16	with prebarcoded pieces?
17	f A Yes. Now. are you including the fact that
18	barcodes can be attached? That the barcoding sorters
19	can run in a mode which allow them to recognize
20	addresses and attach barcodes?

- Q Yes. would you agree that after that
  they're handled in the automation mail stream unless
  they're for some reason rejected and redirected to the
  manual mail stream?
- 25 A Yes. Certainly.

1	Q Now, would you conclude that after the		
2	Postal Service applies a barcode the resource usage		
3	for automation compatible pieces would tend to		
4	resemble that of pieces barcoded or prebarcoded by the		
5	mailers?		
6	A After that point, yes.		
7	Q Yes.		
8	A so it's handling down in the last two		
9	operations there, your DBCS boxes. Yes.		
10	Q Okay. And it's your understanding that the		
11	processes for applying barcodes to automation		
12	compatible pieces are also themselves highly		
13	automated?		
14	A Yes.		
15	Q And if a piece is not successfully barcoded		
16	where would the first handling pieces be recorded?		
17	A The first handling piece is recorded in		
18	whichever operation it first touches. If it first		
19	touched in the OCR operation and could not be resolved		
20	there, that would still be where the first handling		
21	piece was attached.		
22	Q So you're indicating here that the first		
23	handling piece is recorded at the place of equipment		
24	which first attempts to put a barcode on that piece?		
25	A That's my understanding, yes.		

1	Q	Now, what is your understanding of how the	
2	Postal Se	rvice processes the nonmachineable mail?	
3	A	The nonmacnineable mail, so things that	
4	cannot eve	er be treated as compatible? They have to	
5	handle it	through manual sorting.	
6	Q	Yes, and that's because the pieces are	
7	physically incompatible with automation equipment and		
8	simply can't be placed on it. Is that correct?		
9	${f A}$	That's what I understand you to be asking,	
10	yes.		
11	Q	So it would follow that these pieces, to	
12	nail the p	point down, won't be processed on the optical	
13	character	reader or various types of barcode sorters?	
14	А	That's correct.	
15	Q	Now, would those pieces first be processed	
16	in manual	operations then?	
17	A	I assume so.	
18	Q	Okay. Please refer to your response to	
1 9	Interrogatory 7(a).		
20	A	I see it.	
2 1	Q	There you agreed in response to that	
22	interroga	tory that mail does not normally flow from	
23	manual to	automated operations.	
24	A	Yes.	
25	Q	I think we've just been over that, but I	
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Т	wanted to emphasize the point with regard to that		
2	interrogatory. And so automation operations process		
3	automation compatible pieces only?		
4	A Yes, that's correct.		
5	Q And, as indicated, it does include both		
6	prebarcoded or mailer prebarcoded and Postal Service		
7	barcoded pieces, but it certainly excludes		
8	nonmachineable pieces?		
9	A Yes.		
10	Q Okay. Whereas the manual mail stream		
11	process is nonmachineable pieces plus automation		
12	rejects?		
13	A Yes, plus it could handle automation		
14	compatible mail which comes in which for some reason		
15	isn't entered into the automated stream. Maybe it		
16	comes in late or something like that to a plant and is		
17	entered directly into manual as I understand it.		
18	Q And those would be rather exceptional		
19	circumstances, wouldn't you think?		
20	A I don't know how frequently that occurs.		
21	Q So nonmachineable pieces or other pieces		
22	that are first processed in manual operations will not		
23	flow to the automated mail stream?		
24	A Yes.		
25	Q And therefore they will cost either little		
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1	or nothing in the automation operations?			
2	A Correct.			
3	Q Now, I believe we agreed that nonmachineable			
4	pieces would get their first processing in manual			
5.	operations, and so I'd like to move on now to the			
6	barcode sorter operations, as well as the optical			
7	character reader, input subsystem and output subsystem			
8	operations that you mention in your testimony. They			
9	are all automated operations, are they not?			
10	A Yes.			
11	Q NOW, would pieces successfully processed in			
12	optical character reader input subsystem and output			
13	subsystem operations therefore be automation			
14	compatible pieces?			
15	A Yes.			
16	Q Okay. Now, doesn't that imply that,			
17	strictly speaking, some first handling piece out			
18	that's FHPOUT specifically the nonmachineable			
19	portion, wouldn't be processed either in a barcode			
20	sort of operation nor an optical character reader			
21	input subsystem or output subsystem operation? Is			
22	that right?			
23	A I'm sorry. Could you repeat the question?			
24	Q Sure. I'm saying that if pieces are			
25	successfully processed in an optical character reader			

Τ.	input subsystem/output subsystem series of operations,			
2	if those pieces are therefore automation compatible as			
3	we've agreed doesn't that imply, strictly speaking,			
4	that some first handling piece out, specifically the			
5	nonmachineable portion, wouldn't be processed either			
6	in the barcode sorter operation nor an optical			
7	character reader input subsystem and output subsystem			
8	operation?			
9	A I'm sorry. I don't see how the second part			
10	of your question is related to the first. You start			
11	with the description of the OCR.			
12	Q What I'm indicating here is that to the			
13	extent that you have excuse me. Let me phrase the			
14	question this way.			
1 5	There's a portion of first handling pieces			
16	that are not processed in any automated operation. Is			
17	that correct?			
18	A Yes.			
19	Q So conceptually shouldn't the participation			

A So what you're talking about is just a

further disaggregation of the first handling pieces

into finer categories? Is that what you're talking

about?

nonmachineable or manual mail?

20

2 1

of first handling pieces involve a third category for

Τ.	Q mat's correct.
2	A Certainly that's possible. That's kind of
3	the path I've attempted to follow throughout my
4	analysis is to disaggregate first handling pieces into
5	finer categories to allow for the fact that different
6	categories of mail volume will have different cost
7	implications. That's what the disaggregation is
8	designed to do.
9	Q Professor Roberts, I'd like you to turn now
10	to Interrogatory 45. There we ask you how you
11	classified manual first handling pieces for your
12	disaggregated models.
13	Your response talks about group numbers, but
14	I'd like to put names on the groups. Is it a fair
15	summary of your response that you combined manual
16	first handling pieces with first handling pieces for
17	the optical character reader, the input subsystem and
18	the output subsystem?
19	A I created two categories in the outgoing
20	mail. I created a category for pieces that had a
21	barcode and so therefore entered processing
22	immediately at the barcode sorter stage being treated
23	as having a barcode and all other mail. I created two
24	categories.

And the all other mail would include manual

Q

25

1	first handling pieces with first handling pieces for		
2	the OCR?		
3	A That's correct.		
4	Q Okay. Now, what is your rationale for that		
5	combination beyond ensuring that manual first handling		
6	pieces were assigned to one of the two groups?		
7	A The issue there was to recognize that pieces		
8	which were entered with a barcode on them were able to		
9	skip some of the initial processing stages and so		
10	could enter directly at the BCS stage and therefore		
11	would incur fewer labor hours in handling.		
12	That's what the model estimates is the		
13	relationship between that and labor hours.		
14	Q Did you consult with any mail processing		
15	expert in the course of developing this treatment?		
16	A I read operational testimony. I consulted		
17	with the staff at <b>OCA</b> .		
18	Q Have you quantitatively examined the		
19	composition of your nonautomation groups between mail		
20	successfully processed in optical character reader		
21	input subsystem and output subsystem operations versus		
22	manual mail?		
23	A Not that I remember, no.		
24	Q Have you quantitatively examined how the		
25	composition of your nonautomation groups may have		

<b>T</b>	changed between mail successfully processed in optical
2	character reader input subsystem/output subsystem
3	operations and manual mail operations?
4	A What: do you mean by composition did you say?
5	Q Yes. I'm looking here at the composition.
6	I take it that if you haven't quantitatively examined
7	the composition of automation groups between mail
8	processed on the operations indicated and manual that
9	you haven't examined how this relationship may have
LO	changed either. Is that correct?
.1	A Are you referring to the disaggregated
L <b>2</b>	categories in 45, in Interrogatory 45? I'm just not
.3	sure what you're referring to here.
L <b>4</b>	Q Yes, in 45. Specifically how the
L 5	nonautomation group breaks out between automation
L6	compatible and nonmachineable. That's the breakdown.
L7	A How the automation group breaks out
L8	between say that again.
L9	Q Automation compatible mail that doesn't have
20	a barcode on it and nonmachineable mail.
21	A Nonmachineable mail. No, I haven't
22	specifically studied that breakdown. The breakdown
23	that I studied was one between pieces that were
24	barcoded and pieces that were not barcoded.
25	Q Let's turn to your testimony at page 31.

1	A All right.		
2	Q And specifically there lines 1 to 4 where		
3	you indicate, "Because of the importance of the		
4	quarterly dummies and the fact they were not used in		
5	my previous studies, I will provide estimates for the		
6	models both with and without the quarterly dummies in		
7	the set of instrumental variables, abbreviated here		
8	as IVs.		
9	Have I quoted that correctly?		
10	A Correct.		
11	Q Can you explain exactly what you mean by		
12	your statement that the quarterly dummies were not		
13	used in your previous studies?		
14	f A In my 2006 paper, I did not use quarterly		
15	dummies, quarterly dummy variables, in any way in the		
16	model.		
17	That's what I was referring to here and so I		
18	was trying to show that this was a change that I had		
19	made between my most recent paper and this testimony		
20	and so I'm providing basically results both ways so		
2 1	that people can see what the implication was.		
22	Q Professor Roberts, would you turn to your		
23	2002 paper at pages 23 to 24?		
24	A Yes.		
25	Q You have a section there entitled Cyclical		
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1	Fluctuations	in Man Hours.	Ts that	correct?

- A That's correct.
- 3 O Now turning to the first paragraph on page
- 4 24, you stated, "The cyclical fluctuation in hours
- 5 can, however, reflect more than the variation in
- 6 output. Differences in work effort or changes in the
- 7 mix of more or less skilled workers may also occur
- 8 from quarter to quarter.
- 9 "In order to control for these other
- 10 potential sources of variation in hours, we will
- include a set of three quarterly dummy variables,
- DO-2, DO-3 and DO-4, to identify observation in the
- second, third and fourth postal quarters
- 14 respectively."
- 15 Is that a correct quote?
- 16 A Yes. Yes, it is.
- 17 O So you have used quarterly dummies as
- 18 explanatory variables in labor demand equations
- 19 before?
- 20 A In my 2002 paper, yes, and I discussed the
- 21 change from 2002 to 2006 in a substantial section of
- 22 the 2006 paper.
- 23 Q Please turn to pages 101 and 102 in the 2002
- 24 paper.
- 25 A All right.

- 0 Specifically there I'm looking at Okav. 2 Tables 8 and 9. What is the title of Table 8? 3 Α Tables 8 and 9? Okav. 4 5 Q Okay. I have that as 102 and 103 in my copy. In those tables were some individual 7 coefficients on the quarterly dummy variables 8 9 statistically significant at least in some of your labor demand equations? Here I'm talking about manual 10 flats, manual leaters, barcode sorter all. 11 Α Yes. Yes, they are. 12 Okay. Now, is it possible that the 13 14 coefficients on the quarterly dummies could be jointly significant in some cases where they're not 15 individually significant? 16 17 That's always possible, but the question that comes up here is how do you want to treat the 18 quarterly variation that's in the data. 19 That's a substantial issue I think in 20 working with this data, and it's an issue that I've 21 talked about at length in both my 2006 paper and in 22 the current testimony how you go about using that 23 variation. 24
  - Well, that these variables are significant

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1	justifies your inclusion of the quarterly dummies on		
2	the right-hand side of your models, doesn't it?		
3	A No, it does not.		
4	Q Professor Roberts, why not?		
5	A There are lots of reasons why a variable		
6	could be statistically significant in a regression		
7	equation and not belong there.		
8	In particular, the quarterly variation in		
9	this data both $in$ the hours data and in the FHP data		
1 0	is quite strong. Whichever way you choose to use		
11	quarterly dummies, quarterly variation in the data is		
1 2	going to be very important and is going to show up as		
13	significant.		
14	The question for modeling is what's the		
1 5	appropriate way to use that quarterly variation? Do		
16	you just put quarterly dummies in the labor demand		
17	functions? That has a very specific implication. It		
18	says think of a plant two different quarters of the		
1 9	year which has exactly the same volume of mail,		
20	exactly the same FHP. What it says is they will sort		
2 1	the mail differently based on quarter of the year, not		
22	based on volume of mail.		
23	In other words, including the quarterly		
24	dummies in the labor demand model says that the		
2 5	technology for sorting, holding mail volume fixed,		

- differs by the quarter of the year. That's a fairly
- 2 strange representation of the technology I think, and
- 3 I couldn't find any evidence in the operational
- 4 testimony that would support that.
- 5 Alternatively, I chose to use the quarterly
- of variation as fluctuations in FMP, which is really what
- 7 it is. It's fluctuations. It's deviations over time
- 8 or movements over time in the activity of mailers that
- 9 lead to variations in the volume of mail, and that's
- really what's going on.
- The quarterly variation is exogenous to the
- 12 plant. It's not variation in the technology. I think
- that I've explained in my testimony in other places.
- 14 Q Let's turn to your response to Postal
- 15 Service Interrogatory No. 12.
- 16 A Yes. I see it.
- 17 Q That asks about your treatment in your model
- 18 today. Around the middle of the second page in that
- response you state, "I believe this is a spurious
- 20 result resulting from a strong pattern of quarterly
- variation in hours and output variables."
- Do you see that?
- A Yes.
- Q Can you explain to me how this belief is
- 25 consistent with your treatment of quarterly dummies in

I	the year 2002 study?
2	A No. I've changed the way that I use the
3	quarterly variation from my 2002 study.
4	Q And the same would be true of your March
5	2006 study? Is that correct?
6	A The March 2006 didn't use them in any way.
7	Here it uses them as instrumental variables.
8	What this reflects is basically my increased
9	understanding of what's going on in these operations
10	and how to use the quarterly variation in the data.
11	This issue of quarterly variation became
12	clear to me as I was working on the 2006 paper. It
L3	was just not something I really spent much time on in
I 4	the 2002 paper. I was there. I was looking at other
15	issues how to use FHP, how to move to volumes of
16	mail in the plant, et cetera.
17	There were a $lot$ of modeling issues and
I 8	econometric issues that were important in the 2002
19	paper. The treatment of the quarterly variation in
20	the data was just a much less important issue there.
21	There were other things that I was addressing.
22	In the 2006 paper, I felt that many of these
23	issues were already settled, at least settled in my
24	mind, and I turned to other issues that were
25	remaining. The quarterly variation in the data as I

1 began to examine that came out that this was really an

- 2 important issue in the way you treat this.
- 3 I spent a lot of time since then thinking
- 4 exactly about this issue, and I think my thinking has
- 5 become clearer and my way of modeling has reflected
- 6 that.
- 7 I might add too it's an issue which is of
- 8 first order importance in the data, and it's never
- 9 mentioned in the Postal Service testimony.
- 10 Q Let's turn now to your choice of sample
- period for the models in your testimony.
- The models in your testimony use a sample
- period from fiscal year 2002 to fiscal year 2005,
- 14 correct?
- 15 A Yes. The current testimony, yes.
- 16 Q That's right. So that's four fiscal years
- for a maximum of 16 quarterly observations per site?
- 18 A Correct.
- 19 Q And in your 2002 paper what was the sample
- 20 period there?
- 21 A I believe that was 1999. My 2002 paper?
- 22 O Yes.
- 23 A I believe that was -- was it 1996 to 2002?
- 24 Q Let me help you out there. Might it have
- 25 been 1994 to 2000?

1	A That sounds reasonable.
2	Q Okay. Now turn to your 2002 paper, page 30.
3	A Yes.
4	Q I'd like to direct your attention to the
5	last sentence of the paragraph under the heading Roman
6	numeral IV, Data Issues, and specifically where you
7	stated, "The demand equations will be estimated using
8	the data for 1994-2000, which are the only years where
9	capital data are available."
LO	Do you see that?
11	A Yes, I do.
12	Q Now, if you had fiscal year 2001 capital
L3	data would you have extended or at least considered
14	extending your sample period into fiscal year 2001?
L 5	A I believe I was writing this paper or I was
L6	working on this paper during the end of 2001, so I
L 7	think that probably wouldn't have been wouldn't
L8	have even been feasible.
L9	Q But if it had been feasible, if you would
20	have written this paper a little bit later so that the
21	data became available, you would have probably in fact
22	incorporated them, would you have not?
23	A I probably would have. I certainly would
24	have looked at them, yes.
25	Q Now, what was the sample period for your
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1	March 2006 paper?
2	A That was 1999 to 2004.
3	Q Basically six fiscal years. Is that
4	correct?
5	A Yes, that's correct.
6	Q Please turn to page 17 of your testimony,
7	and specifically here I'm looking at lines 6 to 8
8	regarding why you selected the sample period you did.
9	A Yes.
10	Q And specifically the quotation there that,
££	"The introduction of the AFSM," and that would be
12	automated flat sorting machine, "technology for
13	sorting flats has completely changed the relationship
14	between volume and labor hours, particularly in manual
15	sorting."
16	Have I quoted that correctly?
17	A Yes.
18	Q Now, can you explain why you consider the
19	effect of automated flat sorting machines to be
20	particularly pronounced for manual sorting as
21	contrasted with automated sorting?
22	A Well, there's basically two important
23	operations that are left. I mean, there's the manual,
24	and then there's the AFSM. Obviously it affects the
25	AFSM.

1	I was just trying to denote that it affects
2	the other things that are going on in the plant. That
3	wasn't meant to exclude other operations.
4	Q Okay. As for your claim that the automated
5	flat sorting machine technology "completely changed
6	the relationship between volume and labor hours,''
7	wouldn't this also have been true of the sample period
8	for your March 2006 paper as well?
9	A Yes, fox the latter part of that. I point
L O	that out in the 2306 paper that the flat sorting
.1	estimates in that paper have changed from the ones I
12	saw in the 2002 paper. They're not the same, and
13	that's sort of the one obvious difference that comes
L <b>4</b>	up between the 2002 and 2006 paper.
15	I speculated there that it was due to the
16	introduction of the AFSM machinery, so that raised the
17	question in my mind this was something that had to be
18	explored further. When I started on this testimony,
19	one of the first things I said is I've got to look at
20	what's going on for the plants when this AFSM
21	technology is introduced.
22	That led me to split the data into plants
23	that used it and plants that didn't, and I saw very
24	different relationships, particularly the response of
25	manual hours to changes in mail volume really showed

1 up quite strongly. They're quite different between

- 2 plants that use this technology and ones that don't.
- It led me to think there's been a
- 4 significant enough change in technology here that I
- 5 really don't want to be pooling these estimates over
- time in the way I was doing earlier.
- 7 I mean, all along it reflects kind of
- 8 focusing on things which look like anomalies in one of
- 9 my earlier papers and then in the next paper
- 10 addressing these issues and trying to explore them in
- 11 more depth. That's been I think reflected throughout
- the three papers that I've written.
- 0 Would the effects of the automated flat
- 14 sorting machine introduction be relevant to letter
- 15 operations?
- 16 A No, I wouldn't expect them to be.
- 17 Q Now, in your 2002 paper you've got several
- 18 pages there discussing technological change within the
- mail streams and specifically with regard to Section
- 20 Roman numeral III-C beginning on page 19 and
- 21 continuing to about the middle of page 23.
- 22 **A** On my 2002 paper?
- Q Yes.
- 24 A I'm sorry. I might have different page
- 25 numbers. What's the section?

1	Q We appear to be a couple of pages off that,
2	but the section is Roman number III-C as the beginning
3	of that section and essentially proceeding three and a
4	half pages through that.
5	A All right. I haven't read this section in a
6	while, but I can see it.
7	Q I'm going to approach this in a fairly
8	general way. We can allot more time to deal with it
9	if it's necessaq, but let's see if we can handle it
10	in a more generalized fashion.
11	Basically in that section you discuss
12	changes to letter processing such as the elimination
13	of letter sorting machines and the deployment of
14	delivery barcode sorters and so on.
15	A All right.
16	Q Now, would you say the changes in letter
17	operations for the period covered by that paper
18	represent more significant factors for the
19	relationship between letter volumes and labor hours
20	than the changes from fiscal year 1999 to date?
21	A Certainly it was the general phasing out of
22	letter sorting machinery and the introduction of the
23	barcode sorting, delivery barcode sorters, yes, that
24	went on in the earlier period.
25	Q Okay. And it's fair to say that your

1	conclusion was that you should control for the mix of
2	technologies?
3	A That's correct. You absolutely have to do
4	that.
5	Q It wasn't inappropriate to employ data from
6	the period when letter processing extensively used
7	letter sorting machines?
8	A It's all a matter of degree. I mean, what
9	you're trying to do is represent the technology that's
10	in use in the plant in as parsimonious a way as you
L1	can do it.
12	What i was doing here was there would
13	certainly be periods when the letter sorting machinery
14	was being phased out and the DBCS was being phased in
15	The way I dealt with it in this earlier paper was to
16	say when I see a technology dying I don't use the
17	observations from the last year of operation of that
18	technology as it was being phased out, and when I saw
19	a new technology being born I didn't use observations
20	from the first year in which it was born.
21	That decision was carried all through my
22	papers and so, yes, the estimates will reflect the mix
23	of technologies that are present in the plant.
24	O Let's so back to your March 2006 paper

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specifically page 50

25

1	A All right.
2	Q And in particular the first full paragraph
3	on that page, the first three sentences, which read:
4	"One strong pattern that appears in the
5	estimates in Tables 4 and 5 which is new to this
6	analysis is the difference in labor demand
7	elasticities between mail volume in the incoming and
8	outgoing sorting stages. The labor demand
9	elasticities are larger for the mail volume in the
10	incoming operations as compared with the outgoing
11	operations. This reflects the fact that the volume of
12	incoming mail is larger than the volume of outgoing,
13	but also that incoming mail is sorted to a greater
14	depth than outgoing."
15	Do you see that?
16	A I do.
17	Q And just to be clear, is it correct that
18	Tables 4 and 5 of your March 2006 paper reported the
19	coefficients for your letter and flat sorting models?
20	f A Yes, they do.
21	Q Okay. Now I'd like you to turn to Postal
22	Service Interrogatory 14.
23	A All right. I'm there finally.
24	Q There we asked you to update a table from
25	your March 2006 paper showing the incoming first

Τ	handling piece shares over time. Do you see that?
2	A Yes.
3	Q Do you agree that your table shows that
4	incoming first handling piece shares have increased
5	over the time period shown for both letters and flats?
6	A Incoming, yes. Outgoing has fallen.
7	Q Is your statement in that paper that the
8	volume of incorning mail is larger than outgoing for
9	flats no less true in fiscal year 2005, quarter one,
10	than it was for data you analyzed in your March 2006
11	paper?
12	A That incoming flats are greater than
13	outgoing flats in 2005-1 versus what else? What am I
1 4	supposed to compare chat with?
15	Q We're comparing the data that you've got in
16	your interrogatory response here with the data you
17	analyzed in your March 2006 paper.
18	A Yes. I mean, the data I analyzed in March
19	2006 was 1999 to 2004.
20	Q And the fact that volume of incoming mail is
21	larger than outgoing for flats is true in both of
22	those time periods?
23	A Yes.
24	Q In both papers? That's correct?
25	A Yes.

1	$\varrho$ Are you aware of any reduction in the depth
2	of sort for incoming mail over this time period?
3	A Reductions in the depth of sort? No, I'm
4	not.
5	Q Okay. So basically you would agree that the
6	factors you cited in explaining the previous pattern
7	of results remain in place here in your testimony
8	today in comparison with your March paper of this
9	year?
10	A Yes, chat's true.
11	Q Okay. Please turn to your testimony, page
12	47, which contains Table 7.
13	A Uh-huh.
14	$oldsymbol{arrho}$ In the panel summarizing your base model you
15	now show much larger elasticities with respect to
16	FHPOUT than in your March 2006 results. Is that
17	correct? Am I reading that table correctly?
18	A You're looking at the top panel, Panel A?
19	Q Yes, the base model panel.
20	A And what are you comparing it with?
21	Q There I'm comparing the numbers that you
22	have there and the elasticity numbers there with
23	respect to FHPOUT, and $I^{\prime}m$ indicating that you have
24	much larger elasticities there than in your March 2006
25	results.

1	f A All right. Yes, although it's a very
2	different sample of plants that you're looking at
3	here. You're really comparing apples and oranges in
4	this case.
5	Q Are the increases in elasticities with
6	respect to FHPOUT anomalous considering your previous
7	explanation?
8	A No. The estimates that you're looking at
9	here are simply for plants that are using the AFSM
0	technology only. The estimates earlier were based on
11	a mix of plants which were using and not using it,
2	time periods which used it and time periods which
.3	didn't use it, so this is one of the things that
4	indicates to me that
5	Whether or not they used the AFSM technology
6	makes a large difference. If you compare Panel A with
17	Panel D, okay, that's really the relevant comparison
8	to make here. Here's the same time period or up
9	through 2005 where you're comparing plants that used
20	the AFSM technology with plants that don't.
2 1	Down at the bottom, those elasticities, the
22	ones in Panel D, are much more similar to what I saw
23	in my earlier estimates, which used time periods and
24	plants that didn't have the AFSM technology in place.
25	You really need to keep that fixed when

1	you're making that comparison I think or recognize the
2	difference.
3	(The document referred to was
4	marked for identification as
5	Exhibit No. USPS/OCA-T1-XE-
6	2.)
7	BY MR. HESELTON:
8	Q Okay, Professor Roberts. Let's shift gears
9	now and go to Exhibit 2, specifically the USPS/OCA-T1-
10	XE-2 document that the Postal Service originally filed
11	on Wednesday, October 25.
12	A Yes.
13	Q Now, the Postal Service greatly appreciates
14	receiving from counsel of OCA your reaction to that
15	exhibit yesterday expressing some concerns that you
16	had with it.
17	As a result of your concerns, we redid that
18	exhibit and furnished you a copy of the redone
19	document. Is that correct?
20	A That's correct.
21	Q Okay. Are there any characterizations of
22	that document that you would like to make now for the
23	record, speaking here of Exhibit 2?
24	A Yes, there are a few things. One is that
25	when you talk about volume in this document that you
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- should denote that it's volume of a particular shape. 1 I believe this document, everything is meant to apply 2 3 to one shape, so all the use of "the" throughout the document should have a subscript or something that 5 denotes it by shape. The second point is that this is a 6 theoretical discussion, and every place where you have 7 FHP used in the document that should just be replaced 8 by the volume of mail in the plant and either incoming 9 or outgoing or whatever, but it's not FHP. 10 FHP only comes into play when you go to 11 estimate the model. This is a theoretical discussion 12 This should be written in terms of the volume of mail 13
- Q Okay. And here expressed in the model FHP would be a measure of plant volume in this document before you?
- 18 A Yes. FHP is unnecessary in this document.

  19 When you go to implement it, when you try and measure

  20 these things, I use FHP in my empirical work. Yes.
- Q Professor Roberts, does that complete your comments regarding this exhibit?
- A Yes, it does.

in the plant.

14

MR. HESELTON: Mr. Chairman, I would like to move into evidence and for transcription in the record

1	the document provided to the witness and headed
2	USPS/OCA-T1-XE-2.
3	CHAIRMAN OMAS: Without objection. So
4	ordered.
5	MR, COSTICH: Mr. Chairman?
6	CHAIRMAN OMAS: Yes?
7	MR. COSTICH: Rand Costich, OCA. There was
8	one typographical error in the last version of the
9	document that I'm not sure has been corrected on the
10	copies that were given to the reporter.
11	MR. HESELTON: Mr. Chairman, I did make that
12	correction. I believe that's a correction in the line
13	that says in the fifth line down, "The marginal cost
14	of a piece of Subclass J in Cost Segment S is"
15	That correction has been made in the copy
16	furnished to the reporter, Mr. Chairman.
17	CHAIRMAN OMAS: Mr. Costich, is that right?
18	MR. COSTICH: That's correct, yes.
19	CHAIRMAN OMAS: Without objection. So
20	ordered.
21	(The document referred to,
22	previously identified as
23	Exhibit No. USPS/QCA-T1-XE-2,
24	was received in evidence.)
25	//

## USPS/OCA-T1-XE-2

Let G be the cost for the cost component corresponding to the cost of processing shape  ${\bf s}$ .

Let V<sub>j</sub> be volume of delivered mail (final output, response to USPS/OCA-T1-37(a)) for subclass j.

The marginal cost of a piece of subclass j in cost component is:

(1)  $MC_{si} = \partial C_s / \partial V_i = C_s \cdot \epsilon_{si} / V_i$ 

Where  $\epsilon_{s_j}$  is the elasticity of cost C with respect to the volume  $V_j$ .

The "constructed" W C is:

(2) 
$$VVC_{si} = MC_{si} \cdot V_i = C_s \cdot \varepsilon_{si}$$

Roberts RVVC<sub>si</sub> (Response to USPS/OCA-T1-24):

(3) RVVC<sub>si</sub>= $C_5 \cdot \eta_s \cdot d_{si}$  (single output)

 $\eta_{i} = \sum \phi_{i} \eta_{i}$ , where  $\phi_{i}$  is the cost share for operation i

(memo: If  $C_{s}$   $\phi_{i}$  =C, (cost in operation i), RVV $C_{sj} = d_{sj} \sum_{i} C_{i} \eta_{i}$ )

Two-output case:

(4a) RVVC<sub>s,IN,j</sub>=C<sub>s</sub>· $\eta_{s,IN}$ ·d<sub>s,IN,j</sub>

(4b) RVVC<sub>s,OUT,i</sub>= $C_s \eta_{s,OUT} d_{s,OUT,i}$ 

 $(4c) \ \mathsf{RVVC}_{\mathsf{s}_i} = \mathsf{RVVC}_{\mathsf{s}_i \mathsf{IN},j} + \mathsf{RVVC}_{\mathsf{s}_i \mathsf{OUT},j} = C_{\mathsf{s}} \cdot (\eta_{\mathsf{s}_i \mathsf{IN}} \cdot d_{\mathsf{s}_i \mathsf{IN},j} + \eta_{\mathsf{s}_i \mathsf{OUT}} \cdot d_{\mathsf{s}_i \mathsf{OUT},j})$ 

Where  $\eta_{s,IN}$  and  $\eta_{s,OUT}$  are weighted averages of, respectively, the incoming and outgoing elasticities by operation weighted as per  $\eta_{s}$ ; and  $d_{sj}$  (IN, OUT) is the distribution key share for subclass j in shape s FHP (FHPIN, FHPOUT).

Equivalence to constructed W C implies

(5) 
$$C_s \eta_s \cdot d_{sj} = C_s \varepsilon_{sj} \rightarrow \eta_s \cdot d_{sj} = \varepsilon_{sj}$$
 (single output case)

(6) 
$$C_s \cdot (\eta_{s,IN} \cdot d_{s,IN,j} + \eta_{s,OUT} \cdot d_{s,OUT,j}) = C_s \cdot \varepsilon_{sj}$$

$$\rightarrow \eta_{s,IN} \cdot d_{s,IN,j} + \eta_{s,OUT} \cdot d_{s,OUT,j} = \epsilon_{sj}$$
 (two outputs)

Decomposing  $\epsilon_{sj}$ ,

, (7)  $\varepsilon_{sj} = \eta_s \cdot \theta_{sj}$  (single output)

Where  $\theta_{si}$  is the elasticity of shape **s** FHP with respect to subclass **j** volume.

Combining (5) and (7). equivalence of (3) to (2) requires

(8) 
$$\theta_{sj}=d_{sj}$$

1	MR. HESELTON: Professor Roberts, the Postal
2	Service thanks you for your candid responses to its
3	questions today.
4	Mr. Chairman, I have no further cross-
5	examination of this witness other than follow-up.
6	CHAIRMAN OMAS: Thank you very much.
7	Is there anyone else who would like to
8	cross-examine Witness Roberts at this point?
9	(No response.)
10	CHAIRMAN OMAS: Are there any questions from
11	the bench?
12	(No response.)
13	CHAIRMAN OMAS: With that, Mr. Costich,
14	would you like some time with your witness?
1 5	MR. COSTICH: Yes, please, Mr. Chairman.
16	Could we have 10 minutes?
17	CHAIRMAN OMAS: Absolutely.
18	(Whereupon, a short recess was taken.)
19	CHAIRMAN OMAS: Mr. Costich?
20	MR. COSTICH: Thank you, Mr. Chairman. The
2 1	OCA has a few questions.
22	CHAIRMAN OMAS: Proceed, please.
23	REDIRECT EXAMINATION
24	BY Mh. COSTICH:
25	Q Professor Roberts, could you turn to the
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1	Postal Service's Cross-Examination Exhibit No. 1?		
. 2	In your cross-examination you described this		
3	document as a stylized document. Is that correct?		
4	A Yes, I did.		
5	Q Could you explain what more might be needed		
6	in this document to more closely reflect reality?		
7	A Yes. A couple of points. One is that since		
8	this is a styl zed model this captures the operating		
9	plan, but this doesn't necessarily capture the reality		
10	of the data on a day-to-day basis.		
11	I mentioned in my response earlier, one of		
12	my responses earlier, that one example of where this		
13	stylized plan would not be accurate is that sometimes		
14	automation compatible letters get handled in the		
15	manual unit from the start for reasons that might be		
16	related to capacity constraints or other things in the		
17	automation operation. That's missed in this stylized		
18	model.		
19	Another example is that there's flexibility		
20	in the way that some of these different flows are		
2 1	handled. For example, bulk entered prebarcoded mail		
22	is represented as flowing into the DBCS operation		
23	only, but if there are capacity constraints or issues		
24	with the BCS sorting some of that mail could be		
25	handled through the MLOCR DIOS system, and in		

1	particular it might because there is some sorting
2	capability on that machine as I understand it, in
3	particular it may need multiple passes on that
4	machinery in order to handle the mail.
5	So there are other flows that can go on that
6	are going to be reflected in the data that we're using
7	for estimation. Those flows have to be allowed. By
8	simply nailing down the model so that you only allow
9	these particular flows, you're going to miss some
10	other pathways that are possible. So that's one issue
11	that this stylized model misses.
12	A second issue that the stylized model
13	misses is the fact that we have to as part of this
14	overall exercise of trying to estimate the
15	relationship between mail volume in a plant and labor
16	hours in a plant, we have to recognize that the mix of
17	operations can change as volume changes. This is one
18	source of potentially increasing cost is volume
19	changes.
20	So, for example, as the volume of mail
21	entering the plant changes, the mix of these different
22	operations, manual versus OCR versus BCS, those
23	operations can scale in different proportions. They
24	don't have to be used in fixed proportions.
25	That's something that my model is designed

1	to capture. It's the whole idea that as the mail			
2	volume expands the mix of these operations may change			
3	in different proportions. The use of each operation			
4	may change in different proportions.			
5	That's something which if you just look at			
6	these stylized flows and then you isolate on each box			
7	independently, which is what the Postal Service model			
8	does, you miss this whole scaling component of mail			
9	volume and so that's an important way in which this			
10	stylized model •• if it leads you to focus on			
11	individual boxes here, you're going to miss that			
12	relationship in the data.			
13	What my model does is it tries to focus and			
1 4	specifically link the volume of mail that comes into			
15	the plant with the hours in each of these operations,			
16	allowing the Postal Service to adopt or adapt within			
17	the plant in any way that it feels best, you know,			
18	works best.			
19	What my model captures then is the			
20	relationship that: actually occurs; not just the			
21	stylized relationship here, but what actually occurs			
22	in the data.			
23	Q Could you look at the Postal Service's			
24	Cross-Examination Exhibit No. 2?			

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25

 $\mathbf{A}$ 

Yes.

1	Q	And particularly the last line, Equation 8.	
2	A	Yes.	
3	Q	Could you explain your understanding of what	
4	that equa	tion means?	
5	Α	Yes. What this exhibit is meant to show I	
6	believe is	s that if you're going to attempt to estimate	
7	the proces	ssing cost and then allocate those processing	
8	costs acro	oss rate classes we're proceeding to do that	
9	in two ste	eps.	
10		One of the steps is to estimate the marginal	
11	cost of a	n additicnal unit of mail volume that comes	
12	inco the plant. That's all done with plant level		
13	data, and that's used to then create the size of these		
1 4	cost pools	S.	
15		The cost pools are then allocated across	
1 6	rate class	ses using shares of the rate classes,	
17	basically	a distribution key. What this analysis is	
18	showing is	s that the distribution key which would be	
19	appropria	te for the model that I've developed is a	
20	distribut	ion key which would be based solely on mail	
2 1	volumes.	That's what the small Ds are down there.	
22	Those woul	ld be the shares of mail in each rate class	
23	as a share	e of the total volume of mail.	
24		I just want to point out that that	
25	distribut	ion key is different than what the Postal	

1	Service model uses. The Postal Service model uses a
2	distribution key which is based on piece handling, not
3	on pieces of mail, not on volume of mail.
4	The reason this differs is that what my
5	model does, what my approach does, is it builds the
6	relationship between plant volume and hours into the
7	estimation stage, into the construction of the cost
8	pool, so once the cost pools are constructed what's
9	left then is to allocate across rate classes.
L O	What the Postal model does is different than
11	that. Their distribution assumption, their
.2	distribution step, is both allocating across rate
.3	classes, but it's also making an assumption about how
1 4	these operations scale up in response to changes in
1 5	volume, so it's making an assumption about what's
16	going on within the plant.
17	That's different than mine and so it leads
8	to this difference in distribution keys as well.
19	Q Professor Roberts, do you have a
20	distribution key based on volume shares?
2 1	A I do not, no. You know, presumably this is
22	something which could be estimated by the Postal
23	Service. The distribution key that they estimated is
24	actually much more complicated than the one that would
25	be needed to implement this methodology here

1	Q If you don't have a distribution key, can					
2	you explain how the Commission can make use of your					
3	analysis in this proceeding?					
4	A Yes. Yes, I will try. Let me offer some					
5	suggestion.					
6	Basically what I've tried to do in my					
7	analysis and the reason I've presented this testimony					
8	is that I'm trying to address what I think is a					
9	limitation, a serious limitation, in the Postal					
10	Service model which effectively rules out one					
11	important source of diminishing returns or increasing					
12	marginal cost in response to changes in volume.					
13	I've provided estimates of elasticities,					
14	elasticities of cost with respect to mail volumes,					
15	which I think relax that assumption and get rid of					
16	that limitation. To make use of them though, the way					
17	to proceed would be to use my estimate to construct					
18	cost pools based on them just like the Postal Service					
19	would do and then use a distribution key to allocate					
20	them across rate classes.					
21	The distribution key that we need doesn't					
22	exist right now, but I think there are a couple of					
23	steps that you might be able to take to at least					
24	correct I think what are the most serious limitations					
25	of the Postal model and move it closer toward mine.					

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1 One of the possibilities is that you could 2 go with my model where we just have a single output. I've emphasized using incoming and outgoing sorting as 3 two different outputs in the model. That means I 4 would need a distribution key which would give the 5 6 shares of the mail volume by rate class for incoming volume and outgoing volume. That's what doesn't 7 8 exist, to my knowledge. 9 If you went with just a single output model, and I provide the elasticity estimates in the paper. 10 11 If you went with that you would only need a distribution key which gives shares of mail volume by 12 13 rate class in %he overall system, and that's something that has to be available, I would assume. 14 So that would be one way, go with a single 15 output and we could construct the appropriate 16 17 distribution key. The other way to go would be to continue to use -- you could basically make a 18 correction to the Postal Service testimony or the 19 Postal Service analysis that would correct for this 20 21 limitation of their model. 22 The basic limitation is the fact that they 23 do not allow the mix of these sorting operations to change in response to changes in volume. 24

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particular, I have estimated that missing link.

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ماد	nave escinaces of what that missing piece is.					
2	What the missing piece shows is that as mail					
3	volume rises the use of the manual operation increases					
4	more than proportionately to the increase in mail					
5	volume while the use of the BCS/DBCS operation					
6	increases almost exactly proportionately to mail					
7	volume.					
8	What's happening is as mail volume rises the					
9	mix of these boxes in this first exhibit is changing					
10	in size, and as mail volume rises the manual box is					
11	getting large. That's a source of increasing cost for					
12	the reasons that we talked about earlier. That's a					
13	source of increasing cost, and unfortunately the					
14	Postal Service model doesn't recognize that. It					
15	doesn't allow that channel to exist.					
16	I provide estimates which would allow you to					
17	at least recognize that the channel exists, and those					
18	are the estimates in Table 1 of my testimony.					
19	Basically what it would show is how would you have to					
20	scale up the cost pools that they construct in order					
21	to reflect this additional relationship that as mail					
22	volume rises the use of the different operations					
23	changes in different proportions.					
24	I think it wouldn't be perfect because the					
25	distribution key wouldn't be perfect, but it would at					

- 1 least allow you to recognize that the size of the cost
- 2 pools that they're estimating are basically too small
- and that the size of those cost pools need to be
- 4 larger, particularly in the case of that manual cost
- 5 pool.
- I realize that's imperfect. It's not a full
- 7 A to 2 correction, but it is a way to kind of take
- 8 what I've done and I think at least address what I
- 9 think is the most serious limitation in the Postal
- 10 analysis.
- MR. CCSTICH: No further questions, Mr.
- 12 Chairman.
- 13 CHAIRMAN OMAS: Thank you, Mr. Costich.
- 14 Mr. Heselton?
- 15 MR. HESELTON: Yes, Mr. Chairman. The
- 16 Postal Service has some re-cross-examination here.
- 17 RE-CROSS-EXAMINATION
- 18 BY MR. HESELTON:
- 19 O Professor Roberts, when you were discussing
- 20 Exhibit 1, the mail flow model, you indicated a number
- of instances, things, considerations that you felt
- were not reflected in this model. Is that correct?
- A I indicated a couple, yes.
- Q Yes. Is it true that you have no measures
- whatsoever of the significance of these items that you

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1 cited in terms of their impact overall on the

- 2 analysis?
- A No, I do not know how they would impact it,
- 4 but to the extent they exist, those and others, those
- 5 pathways are captured and are reflected in the
- 6 estimates that I provide.
- 7 Q And conversely, to the extent that they
- 8 don't exist it would not be necessary to represent
- them on the Exhibit 1 model? Is that correct?
- 10 A That's correct, but they also would not be
- reflected in the estimates then.
- 12 Q Now, regarding the discussions subsequent to
- that I just want to clarify that when you're talking
- 14 about the volume measures that you've used versus the
- 15 volume measures that the Postal Service has used that
- the volume measures that you use are related to plant
- volumes, not system-wide volumes overall. Is that
- 18 correct?
- 19 A That's correct. The system-wide volumes,
- that's what this second exhibit shows. The system-
- 21 wide volumes only become relevant in the distribution
- 22 stage. They are not relevant for estimating marginal
- 23 costs at plant level.
- 24 MR, HESELTON: Thank you, Professor Roberts.
- THE WITNESS: Okay.

1	CHAIRMAN OMAS: Thank you, Mr. Heselton.				
2	Is there anyone else who would like to re-				
3	cross at this point?				
4	Go ahead, Commissioner Goldway.				
5	COMMISSIONER GOLDWAY: As I understand it,				
6	in your model the volume variability increases in mail				
7	handling is over 100 percent. Traditionally the				
8	Postal Rate Commission has relied on a 100 percent				
9	formula.				
10	In reviewing the facts we have in front of				
11	us for this case, I wondered since you've discussed				
12	your overall proposal with us in this last discussion				
1.3	whether you think the numbers that you've presented,				
14	which are significantly over 100 percent, are more				
1 5	reliable than the 100 percent formula that the Postal				
16	Rate Commission uses now?				
17	THE WITNESS: Where the over 100 percent				
18	comes in is in letters. It's for the letter				
19	processing pool.				
20	What I've seen over time as I've looked at				
2 1	letter processing operations, I've gotten ${f a}$ range of				
22	estimates, as is expected as technologies change and				
23	as time periods change, and what I've seen is				
24	consistently estimates that are very, very close to				
25	one or slightly above one, in that range over time.				

ſ	I do think that there's evidence, and I sort					
2	of look at the overall body of evidence, that there is					
3	a source of increasing marginal cost would be the					
4	economic jargon. There is a reason to believe that					
5	these elasticities are not less than one, certainly					
6	not of the order of magnitude that the Postal Service					
7	claims, and that the reason for that is that it's					
8	missing one of these important components, which, as I					
9	mentioned a minute ago, is this scaling up of the					
10	manual operation as plant volume rises.					
11	What's responsible for the estimate I get					
12	this time 1.2 I believe it is roughly for letters					
13	is really that scaling up of the manual operation.					
14	That's a very important part of that thing. It's the					
15	first time I've seen the scaling up that large in the					
16	work that I've done.					
17	COMMISSIONER GOLDWAY: My follow-up to that					
18	is in the last two to three years the Postal Service					
19	has engaged in a consolidation program. Mail volumes					
20	overall in the system have not risen enough to say					
21	that in any one plant volumes are going up and causing					
22	these extra increases in cost except, it seems to me,					
23	if it's part of a pattern of plant consolidation and					
24	the plant consolidation is therefore requiring in each					
25	one of the plants that now exists, that each one of					

1	those plants is handling more mail.					
2	Would I be right to think that the					
3	consolidation program may have some additional cost t					
4	it, as well as perhaps some benefits if you're findir					
5	this increase in costs as volumes go up at the plant					
6	level?					
7	THE WITNESS: To the extent that it's being					
8	handled in the manual operations, you know, that would					
9	show up as rising volumes and hours in manual					
10	operations that are going up even faster.					
11	I mean, I would be presuming that the Posta					
12	Service would be trying to handle when they					
13	consolidate plants would be trying to handle it in					
14	automated operations. I don't know that it would					
15	necessarily show up in manual operations, but					
16	certainly the case that overall volumes are rising and					
17	how does the new plant respond to that change in					
18	volume, that would be something that would be in the					
19	data.					
20	We would observe higher volumes in these					
21	plants that are consolidated, and that would be					
22	reflected. I mean, that would be information used in					
23	constructing the parameter estimates that I see.					
24	What I don't have for you is I could see how					
25	consolidation would raise some plant volumes. What I					

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- don't have is an understanding of how the
- 2 consolidation would lead to more manual use, as
- 3 opposed to more --
- 4 COMMISSIONER GOLDWAY: But you are seeing
- 5 more manual use?
- 6 THE WITNESS: That's what I'm seeing.
- 7 Correct.
- 8 COMMISSIONER GOLDWAY: So we don't know
- 9 necessarily that one is caused by the other, but they
- both seem to be happening?
- 11 THE WITNESS: What I see is the increase in
- volume and the increase in manual use, yes. I do see
- 13 that.
- 14 COMMISSIONER GOLDWAY: All right. Thank
- **15** you.
- 16 CHAIRMAN OMAS: Is there anyone else who
- would like to re-cross?
- 18 MR. COSTICH: Mr. Chairman, Rand Costich for
- 19 the OCA. If I could follow up on Commissioner
- 20 Goldway's questions?
- 21 FURTHER REDIRECT EXAMINATION
- BY MR. COSTICH:
- 23 Professor Roberts, if volumes were declining
- instead of rising could you get the same results that
- you have gotten?

1	A Yes. I mean, you can get a changing					
2	proportion of these different operations whether					
3	volumes are going up or going down. That would be					
4	reflected in the data.					
5	Q If volumes jumped on certain days beyond					
6	average plant capacity, would that have an effect on					
7	your elasticity estimates?					
8	A Certainly. If volume is high on some					
9	particular days and automated operations become					
10	capacity constrained for some reason and that flows					
11	into manual as a result that will be reflected in the					
12	data. Yes. That's exactly what the model is designed					
13	to estimate is that relationship.					
14	MR. COSTICH: No further questions.					
15	CHAIRMAN OMAS: Thank you, Mr. Costich.					
16	Mr. Roberts, that completes your appearance					
17	here today and your testimony. We here at the					
18	Commission appreciate your contribution to the record,					
19	and we thank you for your contribution and all that					
20	you've done for us. We appreciate it, and you are now					
21	excused.					
22	Thank you.					
23	THE WITNESS: Thank you, Mr. Chairman.					
24	(Witness excused.)					
25	CHAIRMAN OMAS: Mr. McKeever?					
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Ī	MR, MCKEEVER: The United Parcel Service				
2	calls Dr. Kevin Neels to the stand.				
3	CHAIRMAN OMAS: Would you please raise your				
4	right hand?				
5	Whereupon,				
6	KEVIN NEELS				
7	having been duly sworn, was called as a				
8	witness and was examined and testified as follows:				
9	CHAIRMAN OMAS: Please be seated.				
10	Mr. McKeever, you may proceed.				
11	MR. MCKEEVER: Thank you, Mr. Chairman.				
1 2	John McKeever for United Parcel Service for the				
13	record.				
14	DIRECT EXAMINATION				
15	(The document referred to was				
16	marked for identification as				
17	Exhibit No. UPS-T-1.)				
18	BY MR. MCKEEVER:				
19	Q Dr. Neels, do you have in front of you a				
20	document entitled Direct Testimony of Kevin Neels on				
21	Behalf of United Parcel Service and identified as				
22	UPS-T-1, revised October 19, 2006?				
23	A I do.				
24	Q If you were to testify orally here today				
25	would that be your testimony?				

1	A It would.					
2	MR. MCKEEVER: Mr. Chairman, with that I					
3	move that the document identified as Direct Testimony					
4	of Kevin Neels on Behalf of United Parcel Service and					
5	identified as UPS-T-1 which reflects the revisions					
6	made by Dr. Neels to his testimony in response to an					
7	interrogatory oil October 19, 2006, be admitted into					
8	evidence.					
9	CHAIRMAN OMAS: Without objection.					
10	Hearing none, I will direct counsel to					
11	provide the reporter with two copies of the corrected					
12	direct testimony of Kevin Neels.					
13	That testimony is received into evidence.					
14	However. as is our practice, it will not be					
15	transcribed.					
16	(The document referred to,					
17	previously identified as					
18	Exhibit No. UPS-T-1, was					
19	received in evidence.)					
20	CH IRMAN OMAS: Mr. Neels, have you had ${\tt n}$					
21	opportunity to examine the packet of designated					
22	written cross-examination that was provided to you					
23	this morning?					
24	THE WITNESS: I have.					
25	CHAIRMAN OMAS: If those questions contained					
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2 your answers be the same as those you previously provided? 3 4 THE WITNESS: They would with one small qualification. 5 I stated in my response to one interrogatory 7 that at the time I prepared that response I had not been able to reproduce Dr. Bozzo's results exactly. 8 9 was subsequently able to reproduce them, and the differences in methodology that explained my inability 10 or explained in one of my subsequent interrogatory 11 12 responses. I believe it's the response to 29(e). 29(b), I believe. 13 MR MCKEEVER: 14 THE WITNESS: Okay. In any case, with that 15 one small qualification I would not change any of my 16 responses. 17 MR. MCKEEVER: Mr. Chairman, for the record, the original interrogatory response where Dr. Neels 18 indicated he could not at the time of that response 19

in that packet were asked of you orally today, would

22 29(b).

CHAIRMAN OMAS: All right. Thank you, Mr.

replicate Dr. Bozzo's analysis is 13(e), and the

explanation later on when he was able to do so is in

24 McKeever.

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Dr. Neels, are there any additional

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corrections or additions you'd like to make to your
2
      answers?
3
                 THE WITNESS: No.
4
                 CHAIRMAN OMAS: Counsel, would you please
      provide two copies of the corrected designated written
5
6
      cross-examination of Witness Neels to the reporter?
                 That material is received into evidence and
7
      is to be transcribed into the record.
8
                                  (The document referred to was
9
                                 marked for identification as
10
                                 Exhibit No. UPS-T-1 and was
11
                                 received in evidence.)
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#### BEFORE THE POSTAL RATE COMMISSION WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes, 2006

Docket No. R2006-1

## DESIGNATION OF WRITTEN CROSS-EXAMINATION OF UNITED PARCEL SERVICE WITNESS KEVIN NEELS (UPS-T-1)

Party <u>Interroaatories</u>

Postal Rate Commission USPS/UPS-T1-1-39

United States Postal Service USPSIUPS-TI-1-39

Respectfully submitted,

the wallen

Steven W. Williams

Secretary

# INTERROGATORY RESPONSES OF UNITED PARCEL SERVICE WITNESS KEVIN NEELS (T-1) DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory	Designating Parties
USPSIUPS-TI-1	PRC. USPS
USPSIUPS-T1-2	PRC. USPS
USPSIUPS-TI-3	PRC. USPS
USPSIUPS-TI-4	PRC. USPS
USPSIUPS-TI-5	PRC, USPS
USPS/UPS-T1-6	PRC, USPS
USPSIUPS-T1-7	PRC, USPS
USPSIUPS-T1-8	PRC, USPS
USPSIUPS-TI-9	PRC. USPS
USPSIUPS-TI-10	PRC, USPS
USPSIUPS-TI-11	PRC, USPS
USPSIUPS-TI-12	PRC, USPS
USPSIUPS-TI-13	PRC, USPS
USPSIUPS-TI-14	PRC, USPS
USPSIUPS-TI-15	PRC, USPS
USPSIUPS-TI-16	PRC, USPS
USPSIUPS-TI-17	PRC, USPS
USPS/UPS-T1-18	PRC. USPS
USPSIUPS-TI-19	PRC, USPS
USPSIUPS-TI-20	PRC. USPS
USPSIUPS-T1-21	PRC. USPS
USPSIUPS-T1-22	PRC. USPS
USPSIUPS-T1-23	PRC. USPS
USPSIUPS-TI-24	PRC, USPS
USPS/UPS-T1-25	PRC, USPS
USPSIUPS-TI-26	PRC, USPS
USPS/UPS-T1-27	PRC, USPS
USPSIUPS-TI-28	PRC, USPS
USPSIUPS-TI-29	PRC. USPS
USPS/UPS-T1-30	PRC, USPS
USPSIUPS-TI-31	PRC. USPS
USPSIUPS-TI-32	PRC. USPS

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#### **Designating Parties**

PRC, USPS
PRC. USPS
PRC. USPS
PRC. USPS
PRC. USPS
PRC. USPS
PRC. USPS

**USPS/UPS-T1-1**. Please refer to your testimony at page 12, lines 7-9. Please also refer to USPS-T-12 at page 46, lines 6-13, where Dr. Bozo states:

In the CRA, **A** is estimated (as shares of handlings by subclass, i.e., distribution keys) from In-Office Cost System (IOCS) data. The process makes use of the most widely-known function of IOCS: producing estimates of proportions of handlings of the subclasses of mail (see also USPS-T-46, Section II.B.1). It is important to note that the IOCS-based distribution key analysis is updated annually with the current year's IOCS sample data, as are the calculations of total labor costs by operation and (potentially) the variabilities. [Footnotes omitted.!

Do you disagree with Dr. Bozzo's characterization of the CRA methods? If so, please state the basis for your disagreement.

#### Response:

I disagree with parts of Dr. Bozzo's characterization, and agree with other parts.

I disagree that the matrix **A** is estimated from in-Office Cost System data. As **I** understand it, the IOCS measures the subclass composition of the mail stream at different stages of processing. I ani unaware of any aspect of the IOCS that tracks an individual mail piece and counts the number of handlings that it receives as it passes through the various processing operations. I agree that the most widely-known function **of** IOCS is to produce estimates of the proportions of costs attributable *to* the various subclasses of mail. I agree that the IOCS-based distribution key analysis and the calculations of total labor costs by operation are updated in every general rate case. I do not know whether they are updated in other years

**USPS/UPS-T1-2**. Please refer to your testimony at page 12, lines 3-4. Please also refer to USPS-T-12 at page 26, lines 10-21. For each of the sorting operation activities listed by Dr. Bozzo (runtime, quasi-allied labor, setup and take-down, waiting for mail, "overhead" activities, and other not-handling activities), please provide your operational explanation why each would (or should) depend on volumes of mail other than the piece handlings of mail processed within the cost pool for a sorting operation. If you have no operational explanation(s) in any case, please so indicate.

#### Response:

This interrogatory requests information in six areas. I have organized my responses accordingly

#### a) Runtime

The primary manner in which the number of piece handlings in one MODS pool might influence runtime in another is by altering the composition and characteristics of the mail stream in the latter pool. In Dr. Bradley's Docket No. R-97 mail processing testimony this possibility was recognized explicitly by the inclusion in his variability models of the "manual ratio" variable.' The same variable appears in Dr. Bouo's Docket No. R-2000-1 mail processing variability models.' In Docket No. R-2001-1, Dr. Bozzo dropped the manual ratio from his models for automated and mechanized operations, but retained it in his models for manual letter and flats processing.<sup>3</sup>

Evidence presented in my testimony in this proceeding indicates that the installation of AFSMIOO machines altered the cost structure of the Manual Flats and

<sup>&</sup>lt;sup>1</sup> Docket No. R97-1, USPS-T-14, pp. 16-17.

<sup>&</sup>lt;sup>2</sup> Docket No. **R2000-1**, **USPS-T-15**. pp. 116-17.

<sup>&#</sup>x27;Docket No. R2001-1, USPS-T-14, pp 47-49

FSM1000 cost pools, indicating that effects such as those modeled by Drs. Bradley and Bozzo persist to this day.

#### b) Quasi-Allied Labor

Dr. Bozzo has indicated in his direct estim ny that he use this term to refer to "activities, particularly moving mail and equipment into and out of the operations, that are similar to LDC 17 allied labor operations but which are carried out by employees clocked into the sorting operation." I would expect the amount of time required for such activities to be sensitive to the overall degree of crowding and congestion at the plant (since Dr. Bozzo's definition implies that these activities take employees outside of the area of the sorting operation ani: into the plant at large). For this reason, time devoted to quasi-allied activities for a specific sorting operation could be expected to be sensitive to the overall level of activity at the plant.

#### c) Setup and Take-Down

As an example, see the testimony of Witness McCrery in which he describes a situation in which small volumes of flats will be processed manually when the volume does not justify setting up and sweeping a scheme.<sup>5</sup> In this case, the volume processed manually affects the setup and take-down time for the alternative automated operation.

#### d) Waiting for Mail

<sup>&</sup>lt;sup>4</sup> USPS-T-12 n 29

<sup>&</sup>lt;sup>5</sup> USPS-T-42, p. 19. lines **28-30**.

Time spent waiting for mail should depend in part on when mail arrives at the plant. Given a set of arrival times at the plant, however, time spent within a particular sorting operation waiting for mail should also depend upon how long it takes employees clocked into allied operations to open containers, separate mail, and deliver it to the direct sorting operations. That time, in turn, will depend upon the overall volume of mail *to* be opened, separated and delivered.

#### e) "Overhead" Activities

The answer to this question depends upon where the line is drawn between the overhead associated with a parlicular sorting operation and the overhead associated with the plant as a whole. In general, I would expect the time and cost required for coordination, scheduling, staffing and other overhead activities to increase with increases in the number of separate activities to be coordinated, and with increases in overall capacity utilization, broadly defined. However, I do not know enough about clocking practices within MODS plants to be able to say with reasonable certainly what portion of such cost increases would be recorded as increased overhead for MODS sorting operations, and what portion would be recorded as increased overhead time in other plant level accounts.

#### f) Other Not Handling

In USPS-T-12, Dr. Bozo discusses this category in connection with "Waiting for Mail." This part of the interrogatory therefore draws a distinction not present in the

portion of Dr. Bozzo's testimony to which it refers. Assuming that this distinction is deliberate and not inadvertent, I will attempt to respond. Since "Other Not Handling" time is a residual category that could cover a large number of different types of situations, it could be influenced in a number of different ways by **the** volume of mail being processed in other activities. To give one possible example, a mechanical problem with the sorting equipment could force the assigned staff to wait until a repairman comes to correct the problem. How long they would have to wait would depend how busy the repairman was responding to problems at other operations.

**USPSIUPS-TI-3.** Please refer to your testimony at page **13**, lines **14**, to page **14**, line **10**.

- a. Please confirm that, for an econometric analysis using MODS workhours at some level of operational disaggregation (whether or not the Postal Service cost pools) as the dependent variable, "misclocking" introduces an error to the dependent variable. If you do not confirm, please explain.
- b. Please confirm that if "misclocking" adds a random error term with mean zero to the dependent variable of an econometric analysis of MODS workhours, the statistical consistency properties of OLS, GLS, and/or instrumental variables (IV) estimators normally is unaffected by the introduction of the error. If you do not confirm, please explain.
- c. Please confirm that if "misclocking" adds a random error term with nonzero mean to the dependent variable of an econometric analysis of MODS workhours, the statistical consistency of OLS. GLS, andlor IV estimators normally is only affected to the extent that various regressors (e.g., overall intercept, site-specific intercepts, quarterly dummy variables, trend variables) fail to control for the systematic component of the "misclocking." If you do not confirin. please explain

#### Response:

#### a. Confirmed

b Partially confirmed. The statistical consistency properties of OLS, GLS, and/or instrumental variables (IV) estimators remain unaffected by the addition to the dependent variable of a random error with mean zero in the dependent variable only if the measurement error in the dependent variable is statistically independent of the explanatory variables,

If the measurement error is correlated with the explanatory variables, consistency of the OLS. GLS, andlor instrumental variables (IV) estimators will be adversely

affected. Consider, for example, a simple OLS regression of MODS hours on volume and other control variables:

$$H^* = \beta_o + B_1 Volume + ..... + B_k X_k + u$$
 (1)

Where u has zero mean and is uncorrelated with the explanatory variables and H represents the actual hours. However, due to the misclocking argument, observed hours Hdiffers from H

Misclocking error is  $e_1 = H - H$ 

Rearranging the equation (1) gives:

$$H = \beta_o + B, Volume + \dots + B_k X_k + u + e_0$$
 (2)

or:

$$H = \beta_o + B_s Volume + \dots + B_k X_k + v$$
 (3)

From equations (2) and (3), if  $Cov(Volume, e_0) \neq 0$ , then  $Cov(Volume, v) \neq 0$ 

In that case, asymptotic bias (inconsistency) in  $\beta_{\scriptscriptstyle \rm I}$  , the OLS estimator, will be given by:

$$plim \beta_1 - \beta_1 = Cov(Volume, v) / Var(Volume)$$
 (4)

c. Not confirmed. If misclocking adds a random error with nonzero mean to the dependent variable in an econometric analysis of MODS workhours, **its** effect **on** the

consistency properties of OLS, GLS, and/or instrumental variables (IV) estimators will depend upon whether or not it is correlated with the explanatory variables. See response to USPS/UPS-T1-3(b), above. Assuming that the independence conditions set forth there are met, adding a random error with nonzero mean to the dependent variable in an econometric analysis of MODS workhours introduces **a** bias into the estimator of the intercept term (See Wooldridge, Econometric Analysis of Cross Section and Panel Data, page 71). Consequently, such misclocking would introduce biases into the estimators of the various intercept terms in the model (e.g. overall intercept, sitespecific intercepts, quarterly dummy variables, etc.).

**USPS/UPS-T1-4**. Please refer to your testimony at page 14, lines 7-8. You characterize it as "surprising" that \$537.6 million in cost was "transferred from Mail Processing to Administration" in BY 2000. Please also refer to USPS-LR-L-9, file "IQCSDataEntryFlowchartFY05.xls, "Q18" tab.

- a. Please refer to PRC Op., Docket No. R97-1, ¶3140. Please confirm that the "transfer" is performed to "apportion Segment 3 costs according to the established method" prior to Docket No. R97-1, as recommended by UPS witness Sellick in that proceeding. If you do not confirm, please explain.
- b. Please refer to Docket No. R97-1, Tr. 26/14222. Please confirm that, at the time, UPS witness Sellick testified that he did not study the appropriate classification of the transferred (or "migrated") costs, and that the Postal Service's approach in Docket No. R97-1 may have been reasonable. If you do not confirm, please explain.
- c. Please confirm that in question 18B, "Operational Area," the parenthetical description of option 'I', "Administrative," is "Including Claims and Inquiry Work, Personnel & Time & Attendance Work, Accounting & Auditing Work, Data Collection & Processing Activities, Procurement, Training, Quality Control/Revenue Protection, General Office Work, Union Business." If you do not confirm, please explain.
- d. Is it "surprising" that mail processing plants would incur costs for some or all **of** the activities listed in part a? Please explain.
- e. To the extent that "administrative" costs incurred at mail processing plants (NOT post offices, stations, branches. or headquarters units) are volume-variable, is it better to treat such costs as representing administration of mail processing activities or as general administration of the Postal Service? Please explain.

#### Response:

- a. Partly confirmed. The Opinion and Recommended Decision from Docket No. R97-1 states that the Commission performs the apportionment for the purpose stated and in the manner demonstrated by Witness Sellick, but I have not inspected the calculations myself to confirm that this is the case
- b. Partly confirmed. Witness Sellick stated that it may be reasonable to distribute a certain type of administrative costs, those that are related to a specific mail

processing operation, in proportion to the subclasses of mail processed in that operation. But he demurred that he had not examined that issue.

#### c. Confirmed.

d. Assuming you meant part (c) rather than part (a), it is not surprising that administrative costs would be incurred at mail processing plants. What is surprising is that for such a large portion of the time, workers found to be performing those administrative tasks were clocked into mail processing MODS codes, rather than administrative MODS codes. In short, I was surprised at the prevalence of conflicts between MODS and IOCS. Below is the full passage from the Commission's Docket No.R2000-1 Opinion and Recommended Decision on this point.

For MODS offices, the Postal Service again proposes to apportion

Segment 3 costs to components according to the MODS record of the

activity an employee was clocked into even where it conflicts with the

activity that the IOCS data collector actually observed being performed.

Resolving all conflicts in favor of MODS data would cause \$72.2 million of

IOCS-defined Window Service and \$537.6 million of IOCS-defined

Administration costs, to "migrate" to the Mail Processing component. PRC

LR-5, CS 3.0 Worksheet 3.01a.

[¶ 3007]

e. To the extent that "administrative" costs incurred in mail processing plants are volume-variable, my primary concern would be to assure that their variability is accurately measured, and that they are attributed to the mail classes that cause them. I would support whatever treatment could best achieve those primary goals.

**USPSIUPS-TI-5.** Please refer to the econometric analysis presented in Section 6 of your testimony.

- a. Please provide, in notation similar to Section IV.D. of USPS-T-12, the estimating equation(s) you used in your analysis.
- b. Did you explore any alternative model(s) or specification(s) in addition to those provided in Section 6 and/or whose estimating equation(s) are provided in response to part a? If so, for each alternative model or specification, please describe the alternative model or specification, indicate the difference(s) between the alternative and the analysis you present in Section 6, and provide a statement of the reasons for rejecting that alternative.

#### Response:

a. The estimating equation used in my analysis took the following form:

$$\ln H_{ii} = \beta_1 T + \beta_2 \ln D_{ii} + \beta_3 \ln V_{bi} + \beta_4 \ln V_{fit} + \beta_5 \ln V_{pit} + \gamma_i + e_{it}$$
 (5)

where:

 $H_t$  is the number of labor hours (summed across all of the MODS operations examined by Dr. Bozo) in plant i during period t.

Tis a time trend variable.

 $D_{t}$  is the number of delivery points in the territory of plant t during period t.

 $V_{tt}$  is the number of letter-shaped first handling pieces for plant iduring period t.

 $V_{fit}$  is the number of flat-shaped first handling pieces for plant i during period t.

 $V_{pit}$  is the number of parcel-shaped first handling pieces for plant i during period t.

 $y_i$  is the estimated fixed effect for plant *i*.

e<sub>if</sub> is a random error term

b. In addition to the model depicted above in equation (5). I investigated three alternative specifications.

First, I considered shape level versions of the model shown in equation (5). In these versions I took as the dependent variable the total labor hours summed across all of the MODS operations dealing with that specific shape. I included as the sole cost driver the number of first handling pieces for that shape. I regarded the plant level results provided by the equation shown above as superior for the reasons set forth in my direct testimony on pages 49-50.

Second, I considered a version of equation (5) in which Priority Mail first handling pieces appeared as a separate fourth cost driver. Results produced by this version closely resembled those produced by equation (5). I selected equation (5) because it sought to estimate fewer parameters from the data.

Finally. I investigated the use of shape-level RPW volumes as cost drivers in **a** model otherwise identical to that shown in equation (5). I rejected these results because of concerns about the precision of the RPW data. The Postal Service had warned that at high levels of geographic andlor subclass detail they may be subject to

high sampling variability (See response to UPS/USPS-T12-14(c) (Tr. 10/2605)).

Inspection of the raw data suggested that such concerns were well-founded.

**USPSIUPS-TI-6.** Please refer to Table 3 from your testimony, USPS-T-1, at page 15. Please also refer to USPS-LR-L-55, Table I-2B, in R2006 Ir-I-55\_pt1.xls. Please also refer to the SAS program iocs\_2005\_analysis.sas in UPS-WP-1.

- a. Please confirm that witness Van-Ty-Smith's definitions of the D/BCS INC and D/BCSOUT pools include MPBCS and CSBCS operations (e.g., operations 874 and 911). If you do not confirm, please explain.
- b. Please confirm that witness Van-Ty-Smith's definitions of the SPBS OTH and SPBSPRIO pools include APPS and LIPS operations (e.g., operations 245 and 257). If you do not confirm, please explain.
- c. Please confirm that witness Van-Ty-Smith's definition of the ICANCEL pool includes operations 017 (Cancelling Operations Misc), 018 (Collection Mail Separation), and 019 (Tabber). If you do not confirm, please explain.
- d. Please confirm that your SAS code does not assign MPBCS or CSBCS tallies (e.g., Q18C02=B or Q18C02=C) to the act-mods-group '0 DIBCS.' If you do not confirm, please indicate exactly where in your SAS **code** you do so.
- e. Please confirm that your SAS code does not assign APPS or LIPS tallies (e.g., Q18C04=B or Q18C04=C) to the act-mods-group '67 SPBS.' If you do not confirm, please indicate exactly where in your SAS code you do so.
- f. Please confirm that your SAS code does not assign tallies with Q18E1O=E ("'Collection/Separation/Dumping/Culling (Typically MODS Op. #s 017-018)") or Q18C02=F ('Tabber") to the act-mods-group '12 ICANCEL.' If you do not confirm, please indicate exactly where in your SAS code you do so.
- g. Please confirm that a portion of the tallies you assign to the "Non-Sorting Activity" group are tallies for breaks, clocking in or out, and empty equipment work (activity codes 6521-6523). If you do not confirm, please explain.
- h. Please confirm that correctly clocked employees in sorting operations may be observed on break, clocking in or out, or handling empty equipment. If you do not confirm, please explain.

#### **RESPONSE:**

a. Confirmed. I note, however, that Dr. Bozzo does not include
 CSBCS in his definition of the D/BCS INC and D/BCSOUT pools (Operation 911)

in his definition of DIBCS INC and D/BCSOUT pools. Please see the mapping in data file *oper-grp-maps.xls* (Operations 908-911 in worksheet 2005) in Section 4 of USPS-LR-L-56 that supports his USPS-T-I2 testimony.

- b. Confirmed, I note, however, that Dr. Bozzo does not include APPS (Operation 245) in his definition of the SPBS OTH and SPBSPRIO pools. Please see the mapping in data tile *oper-grp-maps.xls* (Operations 154-157 and 244-247 in worksheet 2005) in Section 4 of USPS-LR-L-56 that supports his USPS-T-12 testimony.
  - c. Confirmed.
- d. Confirmed, I note, however, that Dr. Bozzo does not include CSBCS (Operation 911) in his definition of the DIBCS INC and DIBCSOUT pools. Please see the mapping in data file *oper-grp-maps.xls* (Operations 908-911 in worksheet 2005) in Section 4 of USPS-LR-L-56 that supports his USPS-T-12 testimony.
- e. Confirmed. I note, however, that Dr. Bozzo does not include APPS (Operation 245) in his definition of the SPBS OTH and SPBSPRIO pools. Please see the mapping in data file *oper-grp-maps.xls* (Operations 154-157 and 244-247 in worksheet 2005) in Section 4 of USPS-LR-L-56 that supports his USPS-T-12 testimony.
  - f. Confirmed
  - g. Confirmed.

h. Confirmed.

**USPSIUPS-TI-7.** Please refer to your testimony at page 15, line 9 to page **16**, line 10, and Tables **4** and 6.

- a. Please confirm that "weighing batches of mail and applying conversion factors" for FHP measurement will, to the extent the conversion factors differ from the actual numbers of pieces per pound of mail, introduce error into the FHP measurement—i.e., the converted FHP and a hypothetical actual piece count would differ. If you do not confirm, please explain.
- b. Please confirm that the conversion error process in FHP measurement, as described in part a, is not present in machine counted TPH and TPF for automated and mechanized operations.
- c. Please confirm that, for some realizations of the FHP conversion error process, measured FHP may exceed TPH and/or TPF in the absence of any error in TPH and/or TPF measurement. If you do not confirm. please explain.
- d. Please consider a hypothetical sorting operation where (1) every handling would be eligible for an FHP count, and (2) no subsequent handlings are carried out, so theoretically FHP=TPH. Assume also the FHP conversion factors are on average correct and the number of observations is large. In the absence of any other errors in FHP or TPH measurement, what fraction of observations would you expect to exhibit converted FHP greater than TPH?
- e. Please confirm that your calculations for Tables **4** and **6** do not otherwise attempt to discern whether the FHP. TPH, and/or TPF data actually are anomalous.

#### **RESPONSE:**

- Confirmed.
- b. confirmed.
- c. Confirmed
- d. I interpret your assumption that FHP conversion factors are "on average correct' to mean that the average of the difference between the true FHP' and the estimated FHP calculated across batches of mail equals zero.

This hypothetical does not provide enough information to permit me to answer the question posed. The answer to this question would depend upon whether the distribution of the random variable FHP-FHP' is symmetric or skewed.

e. This question is unclear. I am unsure what the term "otherwise" refers to. In addition, the question seems to draw a distinction that is not defined between actual anomalies and what might be termed "non-actual" (or, perhaps more artfully stated, "apparent") anomalies. In an effort to be responsive, I will assume that this question attempts to distinguish "actual" anomalies from what I will call "apparent" anomalies, and that apparent anomalies arise when the FHP conversion factors are "correct on average," TPH andlor TPF counts are accurate, and estimated FHP exceeds TPH or TPF solely because for a particular batch of mail estimated FHP exceeds actual FHP. Given these interpretations, I confirm that the results shown in Tables 4 and 6 make no effort to distinguish between actual and apparent anomalies. I simply report instances in which the figures reported in Dr. Bozzo's data violate relationships that should hold by definition, regardless of the reasons for those violations.

**USPSIUPS-TI-8.** Please refer to your testimony at page 16, line **12,** and Tables 4-7. Please also refer to the Stata program Flag **Errors.do**, in UPS-WP-1, specifically the code:

```
*MAKE FLAG 1 = 1 IF HRS or TPF or TPH ARE ZERO FOR AUTO OPS

* AND IF HRS or TPF or TPH ARE ZERO FOR MANUAL OPS
gen flag 1 = 0
replace Flag_1 = 1 if auto==1 & flag_0==0 & (hrs==0 | tpf==0 |
tph==0)
replace flag_1 = 1 if manual==1 & flag_0==0 & (hrs==0 |
tph==0)
```

- a. Please confirm that the above code is intended to indicate observations that fail the criterion "If volume data are present, hours data should also be present, and vice versa." If you do not confirm, please explain the purpose of the code.
- b. Please confirm that observation counts from the two "replace" statements are the source of the observation counts in line 6 of Tables 4-7. If you do not confirm, please describs your calculations for those lines in detail.
- c. Please confirm that "(hrs==0 | tpf==0 | tph==0)" evaluates to "true," and you flag an error ("flag-I = 1") for an automated or mechanized operation, if hours, TPF, and TPH are all zero. If you do not confirm, please explain.
- d. Please confirm that "(hrs=0 | tph=0)" evaluates to "true," and you flag an error ("flag-I = 1") for a manual operation, if hours, and TPH are both zero. If you do not confirm, please explain.
- e. Please confirm that observations where hours, TPH, and (as applicable) TPF are all zero are not anomalous by the criterion from page 16, line 12—i.e., the data are consistent with being "valid zeros." If you do not confirm, please explain.
- f. Please show the number of observations in each entry in line 6 of Table 4 and line 6 of Table 6, where hours, TPF, and TPH are all zero—Le.,  $\{hrs=0 \& tph=0\}$ .
- g. Please show the number of observations in each entry in line 6 of Table 5 and line 6 of Table 7 where hours, and TPH are both zero—i.e., (hrs==0 & tph==0).
- h. Please provide the program code, and any output logs, used to produce the responses to parts f and g.

#### RESPONSE:

- a. Confirmed
- b. Not confirmed. The flag\_1 variable is created at the operation level. The count of the maximum of the flag\_I variable by cost pool is reported in Tables 4 and 5. Tables 6 and 7 show counts of those records where the maximum of the flag\_1 variable by cost pool equals one, and the criteria for the previous lines in the table were not met. These calculations are performed in flag errors.do, contained in UPS-T1-Neels-WP-1 Revised, MODS Data\Data Errors.
- c. Not confirmed. If hours, TPF, TPH and FHP are all zero then
   Flag-0 = 1 and Flag-1 will not be set to 1. If hours, TPF, and TPH equal zero but FHP does not equal zero, then Flag-I will be set to 1.
- d. Not confirmed. If hours, TPH and FHP are all zero then Flag-0 =1 and Flag\_1 will not be set to 1. If hours and TPH equal zero but FHP does not equal zero, then Flag-1 will be set to 1.
- e. The determination of whether records are valid where hours, TPH, and (as applicable) TPF are all zero depends on the value of FHP. If FHP is also zero, then these records might represent valid zeros. They might also represent gaps, however. If FHP is not zero, however, it would not be appropriate to regard these records as valid zeros.

f-g. Counts of line 6 records in Tables 4 and 5:

Cost	Name	Count of Line 6	Line 6 records where hrs=0 8 tph=0 & (if applicable) tpf =0	Line 6 records where hrs=0 & tph=0 8 (if applicable) tpf =0 & fhp does not equal 0
11	Manual flats	120	0	0
12	Manual letters	104	0	0
13	Manual parcels	1310	0	0
14	Manual priority	967	0	0
18	Cancellations	212	0	0
34	SPBS Total	1082	30	30
39	AFSM 100	132	20	20
4	OCR	180	50	50
6	FSM 1000	286	64	64
AC	Outgoing DIBCS	1178	125	125
BD	Incoming D/BCS	847	177	177

Counts of line 6 records in Tables 6 and 7:

Cost	Name	Count of Line 6	Line 6 records where hrs=0 8 tph=0 8 (if applicable) tpf =0	Line 6 records where hrs=0 8 tph=0 & (if applicable) tpf =0 & fhp does not equal 0
11	Manual flats	116	0	0
12	Manual <i>letters</i>	104	0	0
13	Manual parcels	1306	0	0
14	Manual priority	955	0	0
18	Cancellations	211	0	0
34	SPBS Total	1078	30	30
39	AFSM 100	129	18	18
4	OCR	152	37	37
6	FSM 1000	277	59	59
AC	Outgoing DIBCS	1089	107	107
BD	Incoming DIBCS	798	153	153

#### h. See int 8 response.do, int 8 response.log,

int8responsetables45.csv, and int8responsetables67.csv which are being
provided in library reference UPS-LR-L-1. The program int 8 response.do is run
using the dataset bozzo\_flags\_op\_level.dta, which is also included in library

reference UPS-LR-L-1. That dataset is created in UPS-T1-Neels-WP-1 Revised, MODS Data\Data Errors\ Flag Errors.do; it can be retained by deleting the line at the end of the program:

capture erase stata\bozzo\_flags\_op\_level.dta

**USPSIUPS-TI-9.** Please refer to your testimony, Table 4, line 5, and Table 6, line 5.

- a. Please confirm that the entries in the "BCS Outgoing" and "BCS Incoming" columns were screened at a finer level of operation disaggregation than the operation groups shown in the header. If you do not confirm, please describe in detail how you arrived at the observation counts in line 5 for those operation groups.
- b. Using your methods, please show how many observations in line 5 of Table 4 and line 5 of Table 6 have (i) only HRS < 0, (ii) only FHP < 0, (iii) only TPH < 0, (iv) only TPF < 0, and (v) more than one variable with negative values. Please also provide the program code, and any output **logs**, used to produce your response.
- c. Please confirm that for the "BCS Outgoing" and "BCS Incoming" cost pools employed in Dr. Bozzo's analysis, the counts of negative values of hours, FHP, TPF. and TPH are as follows:

Quarterly observations with negative MODS data, BCS Operation Groups Variable BCS Incoming

(group 71 + group 73)

**BCS Outgoing** 

(group 72 + group 74)

HRS < 000

FHP < 0.02

TPF < 000

TPH < 000

Source: USPS-LR-L-56, vv9905.xls.

If you **do** not confirm, please provide the counts you believe to be correct, and show your calculations in detail.

#### **RESPONSE:**

a. Confirmed

b. See below, which is generated from *int* 9 *response.do, int* 9 *response.log,* and *int*9*response.csv*, which are each being provided in UPS-LR-L-1.

Cost	Name	HRS < 0	FHP c 0	TPH < 0	TPF < 0	Morethanone variable with	Total
		<u>(o</u> nly)	(onl <u>y)</u>	(only)	(only)	negative values	
11	Manual flats	2	6	0	0	8	16
12	Manual letters	0	1	1	0	0	2
13	Manual parcels	.1	0	0	0	I	5
14	Manual priority	3	8	0	0	36	47
18	Cancellations	0	0	3	2	0	5
34	SPBS Total	2	5	0	0	5	12
39	AFSM 100	0	8	0	0	0	8
4	OCR	1	39	4	0	0	44
6	FSM 1000	1	40	0	0	0	41
AC	Outgoing D/BCS	4	468	26	0	14	512
BD _	Incoming D/BCS	3	185	3	0	3	194

c. Not confirmed. In answering this question I have interpreted the phrase "employed in Dr. Bczzo's analysis" to refer to all of the records contained in Section 1\Data\vv9905.xls in USPS-LR-L-56. The counts I believe to be correct are shown below, which are generated from int 9 response.do and int 9 response.log, found in UPS-LR-L-1, The program int 9 response.do is run using the dataset bozzo\_flags\_op\_level.dta, which is also included in library reference UPS-LR-L-1. That dataset is created in UPS-T1-Neels-WP-1 Revised, MODS Data\Data Errors\Flag Errors.do; it can be retained by deleting the line at the end of the program:

capture erase stata\bozzo\_flags\_op\_level.dta

Variable	BD BCS Incoming	AC BCS Outgoing Grou s 72 + 74
HRS < 0		1
FHP < 0	10	5
TPF < 0	0	1
TPH < 0	0	1

**USPSIUPS-TI-IO.** Please refer to your testimony at page 24, lines 11-21, and Table 8. Please also refer to USPS-T-12. Table 26.

- a. Please confirm that the estimated standard error for Dr. Bozzo's recommended Manual Priority elasticity is 0.09. If you do not confirm, please explain.
- b. Please confirm that the estimated standard error for the Manual Priority alternative elasticity based on weekly screens is 1.8. If you do not confirm, please explain.
- c. Please confirm that what you term the "true composite" in Table 8 is presented in USPS-T-12, Table 26.
- d. Given the large decrease in the precision of the Manual Priority estimate, is it necessarily unreasonable to present the composite variability with and without the result in the unreliable cell?
- e. Please confirm that, as statistical estimates, a set of econometric elasticities would be expected to exhibit increases and decreases of varying amounts (depending on the sampling errors of the estimates) when estimated on different samples. If you do not confirm, please explain.

#### **RESPONSE:**

- a. Confirmed.
- b. Confirmed.
- C Confirmed.
- d. The term "unreasoriable" used in this interrogatory is open to such a breadth of different interpretations that I am unsure how to answer
- e. Confirmed. I will note, however, that "increases and decreases of varying amounts" could arise from at least two different causes. First, such changes might be the innocuous result of random variations within the overall population. However, they might also result from the fact that the relationship

between the dependent variable and the independent variables differs systematically from one subpopulation to another. The results presented in Tables 11 through 15 of my testimony suggest that systematic differences of the latter type exist within the population of **MODS** plants examined by Dr. Bozzo.

**USPS/UPS-T1-11.** Please refer to your testimony at page 24, lines 19-21, and Table 8. Please also refer to your testimony from Docket No. R2000-1, UPS-T-1 at 58, lines 14-16 (Tr. 27/12830).

- a. Please confirm that your Table 8 (and USPS-T-12, Table 26, from which your table is derived) show that the imposition of stricter data screens increased some elasticities and decreased others. If you do not confirm, please explain.
- b. Please confirm that, in your previous testimony cited above, you attributed a higher variability from a "parcels" model aggregated over several cost pools, as compared to cost pool results presented at the time by the Postal Service, to "elimination of gross errors" in the data, and not to other sample or specification differences between your alternative model and the Postal Service's models. If you do not confirm, please provide the interpretation of your previous testimony that you believe to oe correct.
- c. Please confirm that, as a general matter, elimination of data errors may affect the variabilities in either direction. If you do not confirm, please explain.
- d. In your previous testimony. did you conduct any explicit analysis to decompose your results among sample size changes, econometric specification changes, and elimination of data errors? If so, please provide detailed references to all such analysis in the Docket No. R2000-1 record.
- e. Consider two operations, X and Y. Suppose a datum that should be recorded to operation X is instead recorded under operation Y. Please confirm that, in such a case, data for operations X and Y exhibit errors, but the aggregate X+Y is correct. If you do not confirm, please explain.
- f. Please confirm that an aggregation of data as in part e is the method by which you purported to "eliminate" errors in the MODS data in your Docket No. R2000-1 analysis referenced above. If you do not confirm, please explain fully how your analysis "eliminated" the errors.

#### **RESPONSE:**

- a. Confirmed
- b. Confirmed.
- c. Confirmed

- d. No.
- e. Confirmed.
- f. Not confirmed. I never claimed in my Docket No. R2000-1 testimony to have "eliminated" data errors. I did make the narrow claim that errors arising from the commingling of SPBS and Manual Parcel reporting could be eliminated by combining *the* two operations into a single parcel operation. See Docket No. R2000-1, UPS-T-1 at 57, lines 8-9 (Tr. 27/12829). Focusing upon such a combination would not have eliminated other types of errors, however. Moreover, my primary motivation for combining MODS operations to allow shape-level analysis was that "manual and automated processing activities represent parallel and interdependent methods for handling the same mail stream. For this reason, it may be appropriate to view the set of activities for a specific shape as an integrated whole and to measure the volume variability of that integrated process." See Docket No. R2000-1, UPS-T-1 at 57, lines 11-16 (Tr. 27112829).

**USPS/UPS-T1-12.** Please refer to section 3a of your testimony at pages 27-30, and Table 10.

- a. Is your "Interpretation" of the "Partial R-squared of excluded instruments" in Table 10 based on a formal statistical test?
- **b.** If your answer to part a is yes, please specify the test (with appropriate references to the econometric literature), identify the p-value (or confidence level) for each cost pool, and specify the critical p-value (or confidence level) you employed.
- **c.** Please refer to the Staiger and Stock paper cited in your footnote 28, at page 557. Please confirm that in the second sentence of the paper's first paragraph, Staiger and Stock use a first-stage F statistic less than 10 as a **rule**-of-thumb for the weak instruments case. If you do not confirm, please explain.
- d. Please confirm that Staiger and Stock show that the two-stage least squares and limited-information maximum likelihood have different finite-sample properties in the case of weak instruments (see section 6.A **of** the cited paper, page 575). If you do not confirm, please explain.

#### RESPONSE:

- a No.
- b. Not applicable.
- c. Not confirmed. In the cited sentence of the Staiger and Stock paper they do not identify the F-Statistic value of 10 as a "rule of thumb." Their discussion suggests that values below 10 are problematical. They **do** not say that values above 10 are not problematical.
  - d. Confirmed

**USPSIUPS-TI-13.** Please refer to your testimony, UPS-T-1, Table 11 (page 32). Please refer also to UPS-WP-I, program WP Chow-Big vs Rest.do and its accompanying output log.

- a. Please confirm that the specification tests you report are based on the entire set of coefficients from the translog models for the listed cost pools, excluding the site-specific intercepts. If you do not confirm, please explain fully.
- b. Please confirm that, for the translog models, the output elasticities or volume variability factors are functions of subsets of the coefficients and certain data elements. Please see, e.g., Tr. 10/2557-8. If you do not confirm, please explain.
- c. Please confirm that you did not compute output elasticities for the subsamples you developed for the analysis reported in Table 11. If you do not confirm, please explain where the results appear in the Stata program referenced above or elsewhere in your workpapers.
- d. If you believe it is inappropriate to employ results from full-sample models, what method or methods would you recommend for combining results from subsamples to apply at the cost pool level or other level of cost aggregation you consider appropriate?
- e. Please consider the following table of volume variabilities for the subsamples in your Table 11 analysis.

Cost Pool	Variability,	"Big Plants"	Variability,	"Small"	Weighted	USPS BY05
	"Big Plants"	Share of	"Small	Share	Average	Variability,
	Sub-sample	FY05 Hours	Plants" Sub-	of FY05	Variability,	Cost Pool
			sample	Hours	Cost Pool	(USPS-T-12)
OCR	0.71 (0.07)	0.87	0.91 (0.07)	0.13	0.73	0.78 (0.05)
					(0.06)	
FSM	0.75 (0.04)	0.79	0.68 (0.06)	0.21	0.73	0.72 (0.03)
1000					(0.03)	
SPBS	0.84 (0.06)	0.92	0.91 (0.08)	0.08	0.86	0.87 (0.05)
					(0.05)	
Incoming	0.85 (0.09)	0.83	0.69 (0.11)	0.17	0.82	0.82 (0.07)
D/BCS				٠	(0.08)	
Outgoing	0.97 (0.07)	.89	1.07 (0.07)	0.11	0.98	1.06 (0.06)
D/BCS					(0.07)	

Standard errors in parentheses. Subsample variabilitiess are assumed uncorrelated in calculating the standard errors of the weighted average variabilities.

Please confirm that the table reflects the correct results for your Table 11 subsamples. If you do not confirm, please provide the results you believe to be correct, and provide the associated econometric code and output log(s).

#### **RESPONSE:**

- a. Confirmed.
- b. Confirmed.
- c. Confirmed.
- d. It would be appropriate in such a case to combine the volume variabilities for the various subsamples into a calculation of the volume variability of the overall population. Such a calculation should reflect both differences in variabilities among the various subgroups, as well as differences in their respective contributions to volume growth.
- e. See below. Note that I was not able to replicate exactly the coefficient estimates of Dr. Bozzo. I believe that the differences between my version of Dr. Bozzo's model and Dr. Bozzo's actual model stem largely from differences between Stata and TSP in their implementations of the autocorrelation correction. Columns 2 and 4 contain the variabilities implied by my subsample results. Column 7 presents the variabilities that result when these subsample results are combined using the methodology employed in preparing the table contained in Interrogatory USPS/UPS-T-T-13(e). The program WP\_Chow\_Big vs Rest\_var.do and output log Chow—Big vs Rest\_var.log included in Library Reference UPS-LR-2 contain the calculations upon which this table is based.

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Cost	Variability,	"Big	Variability,	"Small"	Weighted	Neels	USPS
Pool	"Big	Plants"	"Small	Share	Average	replication	BY05
	Plants"	Share	Plants"	of FY05	Variability,	of USPS	Variability
	Sub-	of FY05	Sub-	Hours	Cost Pool	BY05	cost Poo
	sample	Hours	sample			Variabilities	(USPS-T
							12)
OCR	0.72	0.87	0.91	0.13	0.74	0.80	0.78
	(0.06)		(0.06)		(0.05)	(0.04)	(0.05)
FSM	0.74	0.79	0.67	0.21	0.73	0.72	0.72
1000	(0.03)		(0.04)		(0.02)	(0.02)	(0.03)
SPBS	0.87	0.92	0.92	0.08	0.87	0.88	0.87
!	(0.04)		(0.07)		(0.04)	(0.03)	(0.05)
Incoming	0.86	0.83	0.69	0.17	0.83	0.82	0.82
D/BCS	(0.06)		(0.07)		(0.05)	(0.04)	(0.07)
Outgoing	1.00	0.89	1.08	0.11	1.01	1.06	1.06
D/BCS	(0.06)		(0.05)		(0.05)	(0.04)	(0.06)

**USPS/UPS-T1-14.** Please refer to your testimony, UPS-T-1, section 3(b) and section 6. In the course of preparing your testimony, did you conduct any of the specification tests you describe in section 3(b) on the alternative model you present in section 6? If so, please provide all results, the associated econometric code, and output log(s). If not, why not?

#### **RESPONSE:**

No. As I stated in my direct testirnony, given the known problems with the MODS data, the highly restricted subsample upon which the alternative models discussed in Section 6 of my testimony were based, and the fact that the dependent variables for these models included only a subset of plant-level work hours, I was not prepared to argue that the Commission should adopt the variability estimates produced by these models as definitive. These were instead intended to be illustrative of the direction I believe empirical research into mail processing volume variability should take. Given the limited purpose for which these estimates were intended, it did not seem necessary to test them exhaustively.

**USPS/UPS-T1-15.** Please refer to your testimony, Section 6 (pages 49-54) and to your response to USPSIUPS-TI-5. Please also refer to Docket No. R2000-1, Tr. 46-E/22041, lines 12-18.

a. In Docket No. R2000-1, Prof. Greene testified (Tr. 46-E/22041, lines 12-18):

[I]t is a maxim in econometrics that micro level data are always better than aggregates. The reason is almost self-evident. Aggregation almost always discards information contained in micro level data, and never creates new information. On the other hand, if it is genuinely believed that the micro level data contain no useful independent information, then they can be aggregated. This process cannot be reversed.

Do you agree or disagree with Prof. Greene? Please explain fully the basis for any disagreement.

- b. Please provide all results, econometric estimation code, and output log(s) for the shape-level models you referenced in response to USPSIUPS-TI-5(b).
- c. Please confirm that your Section 6 model includes SPBS handlings in the "Parcel" volume category. If you do not confirm, please describe fully your treatment of SPBS handlings, and provide detailed citations to the Stata code in your workpapers.
- d Does your treatment of SPBS differentiate handlings of bundles of flat-shape pieces and handlings of parcels or IPPs? If so, please explain your methods in full. If not, why not?
- e. Do you believe that a unit of letter FHP will have the same effect on workhours in letter-shape operations and non-letter-shape operations? Please explain your response.
- f. Do you believe that a unit of flat FHP will have the same effect on workhours in flatshape operations and non-flat-shape operations? Please explain your response.
- g. Do you believe that a unit of parcel FHP will have the same effect on workhours in parcel-shape operations and non-parcel-shape operations? Please explain your response.

#### **RESPONSE:**

a. I agree that micro-level data contain more information than aggregated data. I agree that micro data (if they are complete) can be aggregated, allowing an analyst to

choose whether to work at an aggregate level or a micro level. I agree that possession of such flexibility is, in general, an advantage. Such flexibility can come at a price, however. Micro data files will in general be larger, more complex, and more cumbersome to work with.

I do not believe that a micro-level approach is always superior to a more aggregated approach. Econometric analyses based upon micro-level data are often more complex than analyses based upon aggregated data, requiring more "nuisance" parameters in order to account properly for micro-level behavioral effects. For example, accounting for seasonal effects requires only three extra parameters in a model based upon quarterly data. A monthly model, in contrast, would require eleven, while a weekly model might require fifty-one. A daily model could require as many as 1,460 if leap years are taken carefully into account. In addition, in models based upon high-frequency data it is often necessary to explore and estimate complex lag structures. In many instances analyses based upon more aggregated data provide a much simpler and more direct way to measure parameters of interest.

I note that Dr. Bozo may share this belief. Dr. Bradley's original mail processing volume variability study from Docket No. R97-1 relied upon data at the accounting period level. However, Dr. Bozzo's Docket No. R2000-1 study and all of his subsequent studies of this topic have relied upon data aggregated to the quarterly level.

b. These items are provided in WP\_Plant-Level\_Regression\_final\_shape.do and output\_shape.log provided in Library Reference UPS-LR-3.

- c. Confirmed.
- d. No. I followed the methodology of Dr. Bozzo on this point, and I am unaware of any aspect of his treatment that draws such a distinction.
- e. No. **A** unit's shape will influence the manner in which it is handled, and the activities within which labor hours are recorded.
- f. See response to USPS/USP-T1-15 (e).
- g. See response to USPSIUSP-TI-15 (e)

**USPSIUPS-TI-16.** Do you agree that automation-compatible, letter-shape mail pieces have distinct cost-causing characteristics for Postal Service sorting operations from nonmachinable lettershape pieces? If you do not agree, please explain your position.

#### **RESPONSE:**

Yes.

**USPS/UPS-T1-17.** Do you agree that automation-compatible letter-shape pieces may be sorted in the Postal Service's automation letter-shape mailstream at lower marginal cost than otherwise identical pieces processed in the manual letter-shape mailstream? If you do not agree, please explain your position.

#### **RESPONSE:**

Yes

**USPSIUPS-TI-18.** Do you agree that automation-compatible, flat-shape mail pieces have distinct cost-causing characteristics for Postal Service sorting operations from nonrnachinable flatshape pieces? If you do not agree, please explain your position.

**RESPONSE:** 

Yes.

**USPSIUPS-TI-19.** Do you agree that automation-compatible flat-shape pieces may be sorted in the Postal Service's automation flat-shape mailstream at lower marginal cost than otherwise identical pieces processed in the manual flat-shape mailstream? **Ifyou** do not agree, please explain your position.

#### **RESPONSE:**

Yes.

*USPSIUPS-TI-20*. Please refer to Tables 21 and 22 in your testimony, UPS-T-1. Please provide the marginal time (workhours) per FHP implicit in each of the coefficients you report on log(FHPIN) and log(FHPOUT). Please show your calculations.

#### **RESPONSE:**

Not applicable. There are no coefficients reported in Table 21 or Table 22 for  $log(FHP_{IN})$  or  $log(FHP_{OUT})$ .

**USPS/UPS-T1-21.** Please refer to your testimony, UPS-T-1, Table 20 (page 52). Please also refer to your testimony from Docket No. R97-1, UPS-T-1 at page 46, lines 17-19 (Docket No. R97-1, Tr. 28/15632), where you stated:

I therefore recommend dropping the threshold "scrub." For similar reasons, I would recommend against adoption of Bradley's 'productivity" scrub.

- a. Does the above passage from your Docket No. R97-1 testimony still reflect your views? If not, please explain why not.
- b. Please confirm that the samples you employed in your alternative variability models, as described in Table 20 of your current testimony, impose both "threshold" and "productivity" screens. If you do not confirm, please explain.
- c. Please confirm that your "strict" sample imposes more stringent "threshold" and/or "productivity" screens than those employed in the Postal Service's BY 2005 models. If you do not confirm, please explain.

#### **RESPONSE:**

a. Yes. However, I must note that, although Dr. Bozzo refers to his "scrubs" using the same words employed by Dr. Bradley in his Docket No. R97-I mail processing testimony, Dr. Bozzo's screening procedures differ significantly from those of Dr. Bradley

Dr. Bradley's productivity screens were designed to eliminate from each of his regression equation samples a pre-specified percentage of observations from the upper and lower ends of the distribution resulting when observations were ranked **in** order of pieces sorted per hour.' In my Docket No. R97-1 testimony, I criticized this screen, citing the lack of external evidence indicating that these observations lying on the tails of

<sup>&</sup>lt;sup>1</sup> Docket No. R97-1, USPS-T-14, p. 32.

the distribution were in fact erroneous.' In his Docket No. R2000-1 testimony, Dr. Bozzo also criticized Dr. Bradley's productivity screen, pointing out that "if fewer than two percent of the observations are clearly erroneous, Dr. Bradley's procedure will remove some observations that are merely unusual" and 'to the extent that more than two percent of the observations are clearly erroneous, removing only the two percent of observations in the productivity tails leaves some number of erroneous observations in the regression sample." Dr. Bozzo went on to obtain from Postal Service operational experts estimates of the maximum and minimum reasonable throughput rates for the various sorting operations that he examined. Rather than eliminating a fixed percentage of observations with extreme values, he instead eliminates observations with reported throughput rates falling outside these bounds. Assuming that these bounds have been set correctly, this procedure addresses the deficiencies I pointed out in this aspect of Dr. Bradley's Docket No. R97-1 mail processing analysis.

The threshold screen raises different and more complex issues. Dr. Bradley justified his threshold screen by arguing that "the work hour and piece handling data reflect a ramping up activity, not a normal operating environment. Data from these startup periods should be eliminated." I disagreed with this argument in Docket No. R97-1, and I continue to disagree with it now. **As I** have shown in my testimony from Docket Nos. R2000-1 and R2006-1, the installation of a new sorting activity at a site and the

<sup>&</sup>lt;sup>2</sup> Docket No. R97-1, UPS-T-1, p. 26 (Tr. 28/15612).

<sup>&</sup>lt;sup>3</sup> Docket No. R2000-1, USPS-T-15, p. 102.

<sup>&</sup>lt;sup>4</sup> Docket No. R2000-1, USPS-T-15, pp. 101-02, 110-12

<sup>&</sup>lt;sup>5</sup> Docket No. R97-1, USPS-T-14, p. 30.

ramping up of that activity occur all the time, and are a normal feature of the operating environment whose cost variability Drs. Bradley and Bozo have attempted to measure.<sup>6</sup> There is no justification for discarding such observations.

In Docket No. R2000-1, Dr. Bozzo changed the justification for the threshold screen and altered its implementation. Rather than eliminating observations during ramping-up periods, he instead sought to eliminate sources of "noise." He offered no external evidence that the observations eliminated from his sample are in fact erroneous other than his comment that the threshold he employed is "very low." Dr. Bozzo altered the implementation of this screen ayain in his Docket No. R2001-1 testimony based upon criticisms of his Docket No. R2000-1 methodology by Postal Service witness Greene. Dr. Bozzo's current approach in principle corrects the conceptual error of systematically eliminating observations from the start-up phases of MODS sorting activities. I remain troubled by the lack of reliable external criteria for determining which of the observations eliminated by this screen are truly erroneous, but elected in the end to retain this screen in my own work.

- b. Confirmed.
- c. Confirmed, in the sense that the "strict" sample applies to these screens at the weekly and accounting period levels.

<sup>&</sup>lt;sup>6</sup> Docket No. R2000-1, UPS-T-1, pp. 5-16 (Tr. 27/12777-12788; Docket No. R2006-1, UPS-T-I, pp. 38-43.

<sup>&</sup>lt;sup>7</sup> Docket No. R2000-1, USPS-T-15, **p. 108**.

<sup>&</sup>lt;sup>8</sup> Docket No. R2000-1, USPS-T-15, p. 109.

<sup>&</sup>lt;sup>9</sup> Docket No. R2001-1, USPS-T-14, pp. 53-54.

**USPSIUPS-TI-22.** Please refer to your testimony from Docket No. R97-1, UPS-T-1, at page 40 (line 15) to page 44 (line 3) (Docket No. R97-1, Tr. 28/15626-15630). At the conclusion of a discussion of purported advantages of cross-section models over the fixed-effects model, you stated:

[T]he cross-sectional results provide a more appropriate basis for the attribution of mail processing labor costs.

- a. Does the above passage from your Docket No. R97-1 testimony still reflect your views? If not, please explain why not.
- b. Please confirm that your alternative model in this proceeding employs a panel data, fixed-effects, instrumental variables estimation approach. If you do not confirm, please explain fully.

#### **RESPONSE:**

a. In my Docket No. R97-1 testimony, I emphasized the importance of focusing on the long-run response of costs to changes in volume. I used the term "long-run" to refer not to a specific time interval, but rather to refer to the change in cost that results when the Postal Service has had the chance to respond fully to a change in volume. As I noted in my Docket No. R97-1 testimony, "one would expect decisions regarding staffing levels, degree of automation, layout of processing flows, and other significant factors affecting the volume variability of processing costs to be closely related to the volumes [of mail] typically processed at a facility."<sup>10</sup> I did not believe then that Dr. Bradley's analysis adequately addressed this panoply of factors. Given a choice from among the limited set of econometric results that were in the record at that time, I felt

<sup>&</sup>lt;sup>10</sup> Docket No. R97-1, UPS-T-1, p. 42, II. 4-6 (Tr. 28/15628).

that the results of the cross-sectional models were closest to the true variabilities. It is still my view that these results came closer to the truth than any of the other results in the record at that time.

b. Confirmed

**USPS/UPS-T1-23.** Please refer to your testimony from Docket No. R2000-1, UPS-T-1 at page 63 (line 1) to page 71, line 10 (Docket No. R2000-1, Tr. 27/12835-12843). In a section entitled "Time Series Analysis of System-wide Mail Processing Costs," you describe an aggregate time series model as "a conceptually superior alternative to the MODS-level analysis presented by Dr. Bozzo." Is the above passage from your Docket No. R2000-1 testimony still your view? If not, please explain why not.

#### **RESPONSE:**

I still believe that the time series approach is conceptually superior to other approaches in that it encompasses the full effect of volume changes on the structure, organization and costs of mail processing. All of the panel data approaches, for example, implicitly hold the number of plants constant. The time series approach, in contrast, can readily account for the effect on costs of adding plants in response to growth in volume, or alternatively, reducing the number of plants and consolidating processing at the remaining plants in response to reductions in volume

These conceptual advantages raust be weighed against a number of practical difficulties. Chief among them are the limited number of degrees of freedom that the time series offers, and the large number of parameters that must be estimated to account for the separate effects on mail processing costs of different subclasses and presort options

**USPSIUPS-TI-24.** Please refer to your testimony at page 52, lines 4-5, and to Table 20. You state:

To deal with the problem of measurement error in the volume variables, I have used an IV fixed effects estimation method.

Given your use of an estimator that is in principle robust to the presence of measurement errors, please explain why you find it necessary to eliminate large numbers of potentially usable observations due to measurement errors?

#### **RESPONSE:**

I do not believe that the instrumental variables estimator can eliminate the effects of all of the types of errors identified in the MODS data. In particular, I question whether, given the finite sample sizes that are available, this estimator will be robust with respect to the presence of extreme outliers. In addition, reporting gaps for specific operations are *common* in the MODS data. Ignoring such gaps when constructing plant-level aggregates would impart a systematic downward bias to volumes and labor hours. Finally, some types of errors – reporting gaps, for example – could be expected to affect not just the regressors, but also the instrumental variables themselves, calling into question their ability to eliminate the effects of measurement error.

**USPSIUPS-TI-25.** Please refer to your testimony, UPS-T-1, at page 56, lines 22-23, where you state that "the Postal Service's study does not address in any way the two-thirds of mail processing costs that fall outside of direct sorting operations." Given the scope of the workhours incorporated in your alternative model presented in Section 6, please confirm that your statement from page 56, lines 22-23, is also true of your model. If you do not confirm, please explain how your results address mail processing costs that fall outside the operations you modeled without actually modeling them.

#### **RESPONSE:**

Confirmed. I requested information that would have permitted me to address these costs. See UPS/USPS-T12-48 and UPS/USPS-T12-49. The Postal Service objected to the production of this information.

USPSIUPS-TI-26. Please refer to your response to USPSIUPS-TI-3.

- a. Please describe and provide any analysis, including econometric code and output log(s), you performed to demonstrate that clocking errors in workhours are correlated with the explanatory variables of mail processing labor demand models you have studied.
- b. Please confirm that the "intercept" terms you mention in response to USPSIUPS-TI-3(c) appear in the calculation of volume-variability factors from the various mail processing labor demand models (the Postal Service's, your Section 6 models, Prof. Roberts's models). If you do not confirm, please explain fully.

#### **RESPONSE:**

- a. I have not performed such an analysis.
- b. Not confirmed. Volume variability is calculated by computing the partial derivative of the logarithm of hours with respect to the logarithm of volume. The "intercept" terms do not appear in the formula, regardless of whether one is considering the Postal Service's models, my Section 6 models, or Dr. Robert's models.

**USPSIUPS-TI-27.** Please refer to your response to USPS/UPS-T1-4(d).

- a. Please confirm that IOCS tally processing assigns an "administrative" operation code (field F260=10) for clocking in or out (activity code 6522), regardless of the employee's clocked-in operation. If you do not confirm, please explain.
- b. Is it anomalous to observe the clocking in or out activity in a mail processing operation? Please explain any affirmative answer fully.
- c. Please confirm that, for the sorting and cancellation operations covered by the Postal Service's models, as well as your model presented in Section 6 of UPS-T-1, the "administrative" tallies (weighted to cost pool dollars) are as follows:

	Total Cost		
	(\$000),		Other
	USPS-LR-L-55,		Administrative
	Table I-2-	Cłocking in or	op. code
Cost Pool	Plants-Poo'cost	out (a/c 6522)	(F260=10 or 17)
D/BCSINC	1,090,377	30,838	5,385
D/BCSOUT	391,639	12,150	1,960
OCR/	201,547	6,706	1,086
AFSM100	538,794	13,246	1,890
FSM/1000	218,122	7,003	582
SPBS OTH	410,170	15,141	1,576
SPBS PRIO	145,691	5,188	1,100
MANF	239,251	<u>8,157</u>	2,146
MANL	917,249	28,629	9,359
MANP	83,115	2,133	865
PRIORITY	317,740	11,300	3,598
1CANCEL	307,118	7,940	3,259
Total	4,860,813	148,433	32,806

Costs in thousands of dollars, tally weights (field F9250) adjusted to cost pool dollars using the factors in USPS-LR-L-55, file DOLWGT.rtf.

If you do not confirm, please provide the results you believe to be correct and provide any computer programs and associated output logs you use to develop the figures.

d. Do you regard the 0.7 percent of costs (32,808/4,860,813) in the "Other administrative op. code" column as quantitatively significant? If so, please explain.

#### **RESPONSE:**

- a. Confirmed for mail processing tallies
- No. If I read the table correctly, it appears that the Postal Service spends over
  \$148 million dollars a large sum just on employees clocking in and clocking out.
- c. Confirmed
- d. Many people would regard \$32.8 million as a considerable sum of money.

  However, as the interrogatory points out, it represents less than one percent of the costs of sorting and cancellation operations.

USPS/UPS-T1-28. Please refer to your response to USPS/UPS-T1-4(d). You state:

What is surprising is that for such a large portion of the time, workers found to be performing those administrative tasks were clocked into mail processing MODS codes, rather than administrative MODS codes.

Please explain whether you consider it "surprising" for "administrative" tasks such as those described in USPS/UPS-T1-4(c) to be recorded under the following MODS operation codes:

MODS Operation	Description
340 341	STANDBY - MAIL PROCESSING  QWL COORDINATOR - NONSUPER EMPS
547	SCHEME EXAMINERS
554	OFFICE WORK & RECORDS-MAIL PROC
555	OFFICE WORK & RECORDS-MAIL PROC
560	MISC ACTIVITY-MAIL PROC
561	MISC ACTIVITY-MAI'L PROC
562	MISC ACTIVITY-MAIL PHOC
563	MISC ACTIVITY-MAIL PROC
564	MISC ACTIVITY-MAIL PROC
577	PREP & VERIFY DELV BILLS-INTERNAT
607	STEWARDS - CLERKS - MAIL PROC
612	STEWARDS-MAIL HANDLER-MAIL PROC
630	MEETING TIME-MAIL PROC
677	ADMIN & CLER - PROCESSING & DISTRIB
681	ADMIN & CLER - PROC 8 DIST INTERNTL
697	ADM 8 CLER-MAIL.REQ 8 BUS.MAIL ENT

If so, please explain.

#### **RESPONSE:**

No,

**USPSIUPS-TI-29.** Please refer to your testimony, UPS-T-1, Table 16 (page 37). Please also refer to UPSWP-1, files Table of Fixed Effects.xls, and WP\_Fixed effects.do, and to USPS-LR-L-56, file varmp\_tpf\_OTHAUTO\_by2005.out.

- a. The output log for WP\_Fixed effects.do does not appear to have been provided in UPS-WP-1. Please provide it.
- b. The regression output in the 'nonmanual\_results' tab of "Table of Fixed Effects.xls" does not appear *to* match the results of the Postal Service models in USPS-LR-L-56. For example, you report a coefficient on "Intph04" of 1.788, whereas the coefficient from the Postal Service model (on "CLNTPH04") is 2.06859 (according to varmp\_tpf\_OTHAUTO\_by2005.out). Similarly, you report 1.201 for the coefficient on "Intph06," versus 1.28372. Please explain the discrepancies fully. Please also provide an update of Table of Fixed Effects.xls that is consistent with the Postal Service regression results, or explain why you are unable to do so.
- c. For any updated results you provide in reponse to part (b), and for each cost pool reported in Table 16, please provide the mean, standard deviation, median, first quartile, and third quartile of the fixed effects terms you analyzed, in addition to the minimum and maximum.
- d. Using the method you employed for Table 16, please provide the mean, standard deviation. median, first quartile, third quartile, minimum and maximum for the fixed effects terms from:
  - (i)Your model from Section 6 of UPS-T-I, for both the "strict" and "loose" samples.
  - (ii) Each of the shape-level models you estimated, as you mentioned in response to USPS/UPS-T1-5(b).

Please provide a spreadsheet with the fixed effects terms and the calculations of the requested statistics.

#### **RESPONSE:**

The programs and worksheets used to compute these statistics are found in Library Reference UPS-LR-4 in the folder "output fixed effects."

a. In the course of preparing the response to this interrogatory, I discovered an error in my workpaper in the portion of the program *WP\_fixed effects.do* that calculates

the fixed effects for automated operations. The corrected versions of the program and log file are called *WP\_fixed effects.do* and *WP\_fixed effects.log* and can be found under "Analysis of USPS models\Fixed Effects," in a revised version of UPS-T1-Neels-WP-1, which will be filed with the Commission shortly.

b. The discrepancies stem in part from the programming error discussed in part a. Correcting this error reduces but does not eliminate the discrepancies. The remaining discrepancies stem from differences in the implementation of the AR(1) correction. In particular, Dr. Bozo and I differ in how we treat gaps in the data. Dr. Bozzo and I both begin by estimating a serial correlation coefficient. We then use this estimate to form a second stage GLS estimator. Dr. Bozo transforms his dependent and independent variables by subtracting from each observation the product of the serial correlation coefficient (rho) and the lagged value of the variable. Observations for which the lagged values are unavailable are dropped from his second stage estimation sample. These dropped observations include the first valid observation for each facility, as well as the first valid observation following a gap in the data. I use a different approach based on the method of Baltagi and Wu." This method recognizes that the error terms associated with observations on either side of a data gap will be correlated, with the strength of the correlation inversely related to the size of the gap. It results in a GLS estimator that can retain as part of the estimation sample observations without valid data for the preceding observation.

Badi H. Baltagi and Ping X. Wu, "Unequally Spaced Panel Data Regressions with AR(1) Disturbances," Econometric Theory, 15, 1999, pp. 814-823.

The fixed effect estimates produced by Dr. Bozzo's method are actually equal to the fixed effects coefficients  $\beta_{1k}$  shown on pages 52 and 53 of his USPS-T-12 testimony, multiplied by one minus rho, where rho is the estimated serial correlation coefficient. To recover the true fixed effect coefficients, I have divided the raw estimates produced by Dr. Bozzo's method by one minus rho. The table containing these results is contained in the file fixed effects *op* level model like *bozzo.xls* under "Analysis of USPS models\Fixed Effects\output" in Library Reference UPS-LR-4.

c. The requested results produced by the corrected version of the program implementing my AR(1) correction are shown below

cost Pool	Mean	Std. Dev.	Median	25%	75%	Min	Max	Implied Productivity Differential
OCR	1.027	0.287	0.987	0.838	1.163	0.532	2.980	560%
FSM1000	1.016	0.459	0.942	0.654	1.331	0.245	2.658	1084%
SPBS	1.050	0.352	1.022	0.808	1.255	0.284	2.048	722%
BCS_IN	1.034	0.290	1.021	0.842	1.209	0.397	2.528	636%
BCS_OUT	1.038	0 320	0.967	0.840	1.187	0.449	2.905	647%
MANUAL FLATS	1.116	0.340	1.058	0.895	1.240	0541	3.425	633%
MANUAL LETTERS	0.929	0.292	0 872	0.697	1.123	0421	2.119	503%
MANUAL PARCELS	0.924	0.560	0.740	0.561	1.108	0.233	3.743	1607%
MANUAL PRIORITY	1.240	0.423	1.171	0.942	1.454	0.443	2.821	637%
CANCELLATION	1.130	0.632	0.977	0.689	1.361	0.274	5.013	1828%

d.

#### ı. See below.

cost Pool	Mean	Std. Dev.	Medi an	25%	75%	Min	Max	Implied Productivity Differential
Strict Sample	0.756	0.427	0.657	0.416	0.981	0.194	2.042	1054%
Loose Sample	0.769	0.255	0.713	0.578	0.923	0.347	1.709	492%

#### ii. See below.

Cost Pool	Mean	Std. Dev.	Medi an	25%	75%	Min	Max	Implied Productivity Differential
Letters Strict Sample	0.883	0.246	0.847	0.705	1.006	0.492	1.984	403%
Flats Strict Sample	0.728	0.332	0.624	0.490	0.895	0.208	2.380	1142%
Parcels Strict Sample	0.251	0.745	0.079	0.043	0.170	0.018	10.085	56850%
Priority Strict Sample	1.301	2.565	0.629	0.410	1.286	0.149	33.281	22318%

**USPS/UPS-T1-30.** Please refer to your testimony, UPS-T-1, at page 47, line **13**, to page 48, line 2 (Section 5b). Please also refer to USPS-T-12 at page 24 (line **19)** to page 25 (line 17).

- a. Do you agree that more highly presorted mail enters the Postal Service's sorting operations, relative to otherwise similar but less-presorted mail, at "downstream" processing nodes and thereby avoids some sort handlings? If not, why not.
- b. Do you agree that the marginal cost difference between more- and less-presorted mail is the marginal cost of the avoided handlings? If not, why not?
- c. Do you agree that the avoided sorts would, in principle, be reflected in avoided total piece handlings (TPH)? That is, TPH in principle measures all sort handlings in distribution operations? If not, please explain fully, and indicate how your response is consistent with the definition of TPH.
- d. Do you agree that FHP does not. in general, capture all avoided handlings for presorted mail? That is, since FHP handlings are a subset of total handlings, some avoided handlings do not result in FHP avoidance? If not, please explain fully, and indicate how your response is consistent with the definition of FHP.
- e Do you agree that required depth of sort, automation compatibility, or other characteristics may affect the marginal cost of an FHP? If not, please explain fully.
- f Please confirm that your model, presented in Section 6, does not distinguish FHP by aepth of sort, entry point (e.g., incoming operations, outgoing operations), automation compatibility, or any other characteristic. If you do not confirm, please explain how information on the characteristic(s) survived your FHP aggregation process.

- a. Yes
- b. Not necessarily. While I would expect the costs associated with avoided sorts to comprise part of the marginal *cost* differential between more and less highly presorted mail, there are also costs other than sorting costs that may need to be considered. More highly presorted mail may still need to be received, unloaded, andlor merged into the mailstream at the appropriate downstream point. It is possible that such non-

sortation related costs may comprise **part** of the marginal cost differential between these different categories of mail.

- c. Yes.
- d. Yes, some avoided handlings will fail to result in avoided FHP.
- e. Yes.
- f. Confirmed

**USPS/UPS-T1-31.** Please refer to your testimony, UPS-T-1, at pages 38-42 (Section 4), at 45-47 (Section 5b), and at 50.

- a. Do you agree that the technology mix employed in mail sorting operations will, in general, affect the costs of sorting mail, including (but not necessarily limited to) the marginal costs of sorting mailpieces with various physical characteristics? If not, please explain fully.
- b. Please confirm that your alternative model presented in Section 6 includes no controls pertaining to capital or the mix of technologies employed at a plant. If you do not confirm, please identify the control variable(s) and provide citation(s) to your workpapers where you employ them.
- c. Please confirm that failing to include controls if they are relevant, using suitable econometric techniques to identify the effects, will generally lead to bias in regression models. If you do not confirm, please explain fully.
- d. Do you agree that the process of developing, testing, and deploying new postal sorting equipment involves decisions made some time (in most cases, more than a quarter) before new equipment actually is deployed? If not, what is the basis for disagreement?
- e. Is it your testimony that excluding a control variable from a regression model is conceptually identical to treating it as "endogenous"? If so, please explain fully and provide citation(s) to authoritative source(s) that support your position.
- f. Do you agree that, in systems of regression equations, the relevant distinction for the treatment of "endogenous" variables is between simultaneously determined variables and "predetermined" variables, where "predetermined" variables include exogenous variables and lagged endogenous variables (see, e.g., George G. Judge et al., The Theory and Practice of Econometrics, New York: Wiley, 1986, at 564-565)? If not, please explain fully and provide citation(s) to authoritative source(s) that support your position.

- a. Yes.
- b. Confirmed, the model presented in Section 6 includes no controls for capital or the mix of technologies. I do not believe that it would be appropriate to include such

controls, because the amount of capital and the mix of technologies employed are themselves influenced by mail volume. By relating labor hours directly to the volume of mail processed, the model in Section 6 encompasses the effects of volume-related changes in capital and technology mix. To account for such changes in connection with a model that included explicit capital andlor technology mix variables it would be necessary to combine the labor hour equation with a system of capital and technology mix equations. The model presented in Section 6 can be regarded as a reduced form representation of that system.

c. I agree that exclusion of relevant control variables will often lead to bias. However, this is not always the case. Omission of relevant control variables will not lead to bias if the omitted variables are uncorrelated with the control variables that have not been omitted. In addition, in the context of a system of simultaneous equations, the omission of relevant endogenous variables from a specific regression equation may produce a biased version of that structural equation, while at the same time producing an unbiased version of the reduced form equation that summarizes the behavior of the system as a whole. In the present context, whether the omission of relevant capital and technology mix variables results in bias depends upon what one is trying to measure. If one is seeking to measure the effect on labor hours of changes in the volume of mail in the context of a set of plants with fixed capital stocks and fixed complements of sorting technologies, omission of the relevant control variables is likely to produce a distorted picture of the characteristics of that relationship. If, however, one is attempting to measure the overall effects of changes in volume on labor hours, including the effects

associated with volume-driven changes in capital stocks and technology mix, one can measure that overall relationship using a model that excludes capital stock and technology mix control variables.

- d. Yes
- e. No. However, as I have noted above, estimation in a simultaneous equations context of a reduced form equation does involve the exclusion of endogenous control variables. This point is discussed in J. Johnston, *Econometric* Methods, Second Edition, McGraw Hill, 1972, pp. 350-351.
- f. One cannot in general assume that lagged endogenous variables can be treated as exogenous variables that raise no simultaneity or bias issues. In a time series context one often encounters error terms that are correlated over time. Such serial correlation can give rise to situations in which there is correlation between a lagged endogenous variable that appears as a regressor and the error term of the equation in which it appears. In such a situation. OLS coefficient estimates will be biased. See Roger J. Bowden and Darrell A. Turkington, *Instrumental* Variables, Cambridge University Press, 1984, pp. 77-85.

**USPS/UPS-T1-32**. Please refer to your responses to USPS/UPS-T1-2 and USPS/UPS-T1-5(b).

- a. Please list the Postal Service mail processing facilities you have visited, when you visited them, and approximately how much time you spent in each.
- b. With respect to your discussion of runtime, please explain whether you believe that, for instance, the addition of a unit of flat-shape volume has a material effect on the mail mix within the letter-shape mailstream. If so, please explain.
- c. Is it fair to characterize the cross-operation effect you describe for the "runtime" activity as primarily a cross-operation effect within a shape-based mailstream? If not, why not?
- d. Please confirm that you did nut investigate any models that explicitly depict crossoperation effects within a shape-based mailstream (e.g., some variation on the model presented in USPS-T-12, Section VII.D). If you do not confirm, please explain why you did not mention such mcdels in your response to USPS/UPS-T1-5(b).
- e. With respect to your discussion of container movement costs, please explain what you believe to be the relative importance of (i) the number of pieces to be transported, (ii) the physical layout of the plant (i.e., the locations of mail processing equipment and staging areas), and (iii) variations in "congestion" within the plant.

- a. During Docket No. R97-1, I visited the BMC located in the Maryland suburbs of **DC** and the facilities co-located with it. This visit lasted approximately 3-4 hours
- b. Given the volumes typically processed in the Postal Service's plants, I would not expect the addition of one flat-shaped mail piece to have a material effect on the mix of mail in any mailstream, including the flat-shape mailstream.
- c. It would be fair to describe the cross-operation effect described in my runtime response to USPS/UPS-T1-2 as primarily an effect operating across operations within the same shape-based mailstream.

#### d. Confirmed.

e. I am not entirely certain to which portion of my response to this interrogatory this question is directed. The only reference to containers in my response to USPS/UPS-TI-2 was in my discussion of "Waiting for Mail." In that part of my response I was not discussing the costs of container handling, but instead the costs incurred when employees clocked into sorting operations are waiting for the completion of the handling. I also note that the rerm "pieces" in the interrogatory is ambiguous, as it could potentially refer in this context to individual mail pieces, bundles of mail pieces, sacks or other items containing multiple mail pieces, or containers filled with *sacks* or other items containing individual mail pieces.

In an attempt to be responsive, I will say that I believe that container movement costs will reflect both the number of containers to be moved, and labor time or cost per container movement. I would expect the latter quantity to depend upon the layout of the plant and the degree of congestion. Volume, loosely defined, is in some sense the most important of these, since if there were no containers to be moved, there would be no container handling costs. I cannot say in general which of the other two factors (layout or congestion) is the next most important. I suspect that the answer may vary from plant to plant.

**USPSIUPS-TI-33.** Please refer to your testimony at page 44, lines 14-16.

- a. Do you agree that the average of the "actual" handling paths for pieces of mail within an analytically distinct group would tend to converge to the "expected" path given a sufficient number of pieces?
- b. Is it your testimony that changes in the "operational plan" do not affect the relationship between mail volumes and FHP, and/or between FHP and the costs of mail processing operations? If so, please explain how those relationships are invariant to the path a piece of mail takes through the system.

#### **RESPONSE:**

a. The answer to this question depends upon the meaning of the term "expected." Since this term comes from Dr. Bouo's testimony, I must interpret this interrogatory in the context of what I understard him to be saying. If this term is being used in the statistical sense of expectation or expected value, the answer will be "yes," by definition. However, if the "expected" path refers to the path specified in the current operational plan, the answer will be no. Even though many (if not most) mail pieces may follow the paths specified in the current operational plan, there will be deviations from the operational plan. Such deviations could be triggered by, among other things, late mail arrivals, transient capacity constraints, or equipment breakdowns. I see no reason why deviations from plan for reasons such as these should become less frequent as mail volumes increase. I believe that Dr. Bozo. in the section of his testimony upon which I was commenting, was using the term \*expected" in the latter sense, to refer to the processing path specified in the current operational plan. Based upon this understanding, my answer to the question posed in this interrogatory is "no."

b. Every mail piece that requires sorting must be sorted for the first time somewhere, and so should generate one FHP count. I would not expect changes in the operational plan to alter this basic fact. Changes in the operational plan could have a big effect, however, on the specific operation in which that FHP occurs. In addition, to the extent that FHP counts the first handling that occurs in a specific plant, it is also possible that changes in the operational plan might change the number of plants through which a mail piece travels. In such a case changes in the operational plan could alter the total FHP count systemwide

**USPS/UPS-T1-34**. Please refer to your testimony, UPS-T-I, Table 19 (page 43)

- a. Please describe fully the model of technology deployment underlying the logit analysis you present in Table 19. In particular, please explain how the underlying model generates the specified relationship between current-period TPH and the equipment deployment dummy variable.
- b. Please describe fully any alternative specifications you explored to the logit models whose results you report in Table 19. summarize their results, and explain why you prefer the Table 19 specifications.
- c. For each of the three models you provide in Table 19, please show how a 10 percent increase in the specified TPH for a median facility affects the probability that the site has the specified equipment. Show all of your calculations.

- The logit analysis presented in Table 19 is not intended to describe a fullyarticulated economic model of technology deployment. Rather, it is intended to

  semonstrate the general result that the technology deployment decisions of the Postal

  Service are influenced by the volume of mail processed at a facility
- In addition to the logit mcdels whose results are presented in Table 19, I also conducted some graphical analyses in which I plotted the number of quarters from the star! of the observation period to the point in time when the automated operation was installed against a measure of the volume of mail processed at the plant. In connection with these plots, I also ran linear regressions on volume of the number of quarters from period start to installation. I felt that the results provided by these linear regressions were distorted by censoring of the data. This censoring arose from the fact that one could not determine for plants where the automated operation was installed at the start of the observation period how long the automated operation had actually been in place

In addition, the logit results seemed to me to be easier to discuss and understand. Finally, I felt that there was value in demonstrating that the relationships I documented in my Docket No. R2000-1 testimony continue to hold today.

known characteristic of the logistic distribution, which is that calculated probabilities are relatively insensitive to changes in values of the independent variables at the tails of the distribution. For example, the model shows that a plant with the median value for TPH of parcels already has a 99.9 percent probability of having SPES machinery. A small change in the volume of parcels will not (and indeed, cannot) have a material affect on this calculated probability. which is already very high. A similar story can be told for the AFSMIOO However, the logistic distribution is sensitive to changes in values of the independent variable when the predicted probability is near the center of the distribution. The second table below shows the effect of a 10 percent increase in the Independent variable at the paint where the predicted probability of a positive outcome is 50 percent. The second table shows much larger effects than the first table.

UPS/USPS-T1-34(c) Table 1, Effect of 10 percent increase in volume measure at median.

	FSM1000	0	AFSM100	90	SPBS	
	Intph FLATS	1.256	Intph_FLATS	5.792	Intph_PARCELS	4.882
[2]	Constant		Constant	-55.756	Constant	-32.697
[3] Median of volume measure in regression sample		10824		1595		10824
[4] 10 percent increase in median		11906		1754		11906
[5] Probability of positive outcome at median		0.877		0.000		0.999997
[6] Probability of positive outcome at 110% of median		0.889		0.000		0.999998
r71 Increase in probability		1 24%		%UU U		%00.0
Sources.						
[1]-[2] UPS-T-1, Neels, Table 19 (p. 43)						
[3] UPS-LR-4, Logit Models/Logit analysis_marg.log						
[4] =[3]*1.1						
$[5] = 1 / (1 + \exp(-1^{*}([2] + [1]^{*} \ln([3]))))$						
7  =  6  -  5						

and at midenial of lawlatic distribution .! UPS/USPS-T1-34(c) Table 2, Effect of 10 percent incre-

	FSM1 ppp	a	AFSITION	a	SPBS	
[1]	Intph FLATS 1.256	1.256	Intph_FLATS 5.792	5.792	Intph_PARCELS	4.882
[5]	Constant	-9.707	Constant	-55.756	Constant	-32.697
[3] Median of volume measure in regression sample		2272		15159		810
[4] 10 percent increase in median		2499		16675		891
[5] Probability of positive outcome at median		0.500		0.500		0.500
_		0.530		0.635		0.614
		2.99%		13.46%		11.43%
Sources:						

[1]-[2] UPS-T-1, Neels, Table 19 (p. 43)
[3] =exp( [2]/-[1])
[4] =[3]\* 1.1
[5] = 1 / (1 + exp(-1\*([2] + [1]\*ln([3]))))
[6] = 1 / (1 + exp(-1\*([2] + [1]\*ln([4]))))
[7] = [6] - [5]

- = 1 / (1 + exp(-1\*([2] + [1]\*ln([3])))) = 1 / (1 + exp(-1\*([2] + [1]\*ln([4]))) = [6] [5]

USPSIUPS-TI-35. Please refer to your responses to USPS/UPS-T1-6(d)-(e).

- a. Please confirm that to correspond to Dr. Bozzo's MODS operation groups, you should have included MPBCS equipment in the the act-mods-group '0 D/BCS.' If you do not confirm, please explain.
- **b.** Please confirm that to correspond to Dr. Bozzo's MODS operation groups, you should have included LIPS equipment in the the act-mods-group '67 SPBS.' If you do not confirm, please explain.

- a Confirmed
- b. Confirmed.

**USPSIUPS-TI-36.** Please refer to your responses to USPS/UPS-T1-7(d). Please assume that the FHP conversion error is symmetrically distributed and answer the hypothetical to which you did not respond in USPS/UPS-T1-7(d).

#### **RESPONSE:**

This follow-up interrogatory still fails to provide enough information to permit me to answer the question posed. However, in an effort to be responsive, I will attempt to till in the missing pieces, and will answer accordingly.

I stated in my response to USPS/UPS-T1-7(d) that I interpreted the assumption that the FHP conversion factors are on average correct to mean that the difference between true FHP and FHP calculated by weighing batches of mail and applying the conversion factor will tend toward zero as the number of batches of mail increases. This follow-up interrogatory asks me to assume also that the FHP conversion error is symmetrically distributed. I interpret this assumption to mean that the estimated FHP will exceed the true FHP for half of all mail batches. and will fall short of true FHP for half of all mail batches.

Interrogatory USPS/UPS-T1-7(d) does not ask about batches of mail. Instead. it asks about "observations." This term is not defined within Interrogatory USPS/UPS-T1-7(d). However, in interrogatory USPSIUPS-TI-8. the term clearly refers to individual observations within the dataset Dr. Bozzo uses in his econometric analysis. The number of batches of mail included within such an observation will *vary*. For this reason, even given the assumption of symmetric conversion errors, the answer to

Interrogatory USPS/UPS-T1-7(d) depends upon how these conversion errors are distributed across observations.

Suppose, for example, that mail tends to be heavier than average during high volume seasons of the year and lighter than average during low volume seasons. This tendency would lead to a situation in which instances when application of the conversion factors produces overestimates of true FHP are concentrated in a small number of high volume observations, while instances of underestimation are distributed across a large number of smaller volume observations. In such a case, less than half of all observations would show an estimated FHP that was greater than true FHP (and hence also, under the assumptions of USPS/UPS-T1-7(d), TPH). If mail processed during high volume seasons were lighter than average, one would observe the reverse.

Another situation that might affect the number of observations in which FHP is greater than TPH under the stated assumptions would involve trends over time. Suppose mail volumes are increasing over time, and that this increase is reflected in growth in the number of mail batches weighed per observation to produce FHP estimates. Suppose that average weight per piece is also increasing over time. In these circumstances, later observations would contain more batches of mail than earlier observations, and would also contain a disproportionate share of batches for which estimated FHP exceeded actual FHP; estimated FHP would exceed true FHP (and hence also, under the assumptions of USPS/UPS-T1-7(d), TPH) for less than half of all observations.

If, in addition to the assumptions specified above, I assume that the tendency for estimated FHP to exceed true FHP is independent of the number of batches of mail included in an observation, estimated FHP will exceed true FHP (and hence also, under the assumptions of USPS/UPS-T1-7(d), TPH) half the time, excluding the presumably small number of instances in which estimated FHP and TPH match exactly. This assumption of independence is a convenient assumption, in that, in combination with the assumptions set forth above, il permits me to provide a definitive answer to the question posed in USPS/UPS-T1-7(d).

I am aware of no evidence. however, that the assumption of independence is empirically justified. In fact, the evidence that exists suggests the contrary. The table shown below presents data on volumes and weight per piece, by class, for 1999 and 2005 the base years for the Docket Nos R2000-1 and R2006-1 rate cases. Consider, for example, the case of First Class Mail. Volume has declined over time, while weight per piece has increased. If the conversion factor for First Class Mail is correct on average over this period, if measurement errors are symmetrically distributed, and if the number of batches of mail weighed remains roughly proportional to mail volume, these trends would imply that the number of batches of mail per observation is higher in the earlier period than in the later period. In addition, instances in which application of conversion factors produces FHP estimates that are less than true TPH would be disproportionately concentrated in the earlier periods. Under these circumstances, one would expect that estimated FHP would exceed TPH for more than 50 percent of the observations

# TO FOLLOW-UP INTERROGATORIES OF UNITED STATES POSTAL SERVICE RESPONSES OF UNITED PARCEL SERVICE WITNESS KEVIN NEELS

Attachment to Kevin Neels (UPS-T-1) Response to USPS/UPS-T1-36

Change in Volume and Weight per Piece by

Mail Class

Volume in thousands of pieces

Weight in ounces

	The second secon	Volume		We	Weight per Piece	
	1999	2005	% Change	1999	2005	% Change
	[a]	[Q]	[0]	[D]	[e]	±-`
First Class	101,936,454	98,066,034	(%)	79'0	0.71	%9
Priority	1 189 469	887,462	(52%)	28.82	30.48	%9
Express	68,673	55,475	(19%)	18.25	14.92	(18%
Mailgram	4,087	1,896	(24%)	00:00	0.00	%0
Periodicals	10 273 827	9,070,003	(12%)	6.98	7,10	2%
Standard	85 661 710	100,942.091	18%	1.99	1.85	%2)
Parcel Post		387,800	22%	97.16	79.04	(19%)
Other Package Services	724,143	777,729	1%2	35.27	35.89	2%
Total Package Services	1 043 125	1,165,530	12%	54.19	50.24	%2)
USPS Mail	382,283	621,283	63%	4.29	2.85	(34%)
Free Mail	53,227	81,306	53%	7.99	6.81	(15%)
Total Domestic Mail	200,612,855	210,891,080	2%	2.02	1.94	(4%)
International Mail	963,425	852,267	(12%)	4.07	4.54	12%
All mail	201,576,280	211,743,347	2%	2.03	1.95	(4%)

Sources

[a] and [d] - Docket R2000-1, USPS-LR-I-275, FY99CRA.xls (Cost and Revenue Analysis ('CRA'), Fiscal Year 1999)

[b] and [e] - Docket R2006-1, USPS-LR-L-2, FY05CRA XLS (Cost and Revenue Analysis, Fiscal Year 2005)

[c] = ([p] - [a]) / [a]

[l] = ([e] - [q]) / [q]

Notes:

The source data have been rounded for ease of presentation in this chart.

**USPSIUPS-TI-37.** Please refer to your response to USPS/UPS-T1-10(e). Please also refer to your testimony at page 26, lines 12-13. Please confirm that you did not conduct any analysis of the effects of the screening levels on the sample composition. If you do not confirm, please explain your original testimony, provide a description of the analysis you performed, and provide all supporting documentation.

#### **RESPONSE:**

Aside from estimation on both the "strict" and the "loose" samples of the plant-level model discussed in section 6 of my testimony, I conducted no analysis of the effects of screening levels on sample composition.

**USPS/UPS-T1-38**. Please refer to your response to USPSIUPS-TI-11(f). Please also refer to your Docket No. R2000-1 testimony, UPS-T-1, at page 58, lines 14-16 (Docket No. R2000-1, Tr. 27/12830), where in explaining differences between the results of your analysis and the Postal Service models, you stated:

This pattern is likely explained by the elimination of gross errors in data reporting across the two parcel sorting operations.

- a. Please confirm that you did claim to have eliminated some (not all) data errors in your Docket No. R2000-1 analysis, as cited above. If you do not confirm, please explain.
- b. Please confirm that the "elimination of gross errors" you claimed to have achieved in the referenced Docket No. R2000-1 analysis was due to an aggregation of data such as in USPS/UPS-T1-11(e)—i.e., certain offsetting errors you felt were in the component data were cancelled out in the aggregate data. If you do not confirm, please explain.

- a Confirmed See response to USPSIUPS-TI-11(f).
- b Confirmed

**USPS/UPS-T1-39**. Please refer io your response to USPS/UPS-T1-8(b) and USPS/UPS-T1-9(a), where you indicate that you carried out your screening at an "operation level" finer, at least in some cases, than the Postal Service cost pools.

- a. Did you also employ operation-level screens for the model you present in Section 6 of UPS-T-I?
- b. Where you screened at finer levels than the cost pools, did you analyze the quantitative significance of the operation-level anomalies at the cost pool level andlor at the level of aggregation you employed in your Section 6 model? If so, please describe your methods in detail. If not, why not?

- a. Yes.
- b. No. While I recognized the possibility that certain types of errors could potentially be cured by aggregation (specifically, instances in which hours or volume that should have been recorded under operation **A** are mistakenly recorded under related operation B), it was also clear that errors of this type represented only one among many types of errors infecting the MODS data. I considered the possibility that an observation might fail a particular test at a tine level of disaggregation while passing that same test at a higher level of aggregation. However, there was no logical reason to conclude that such instances necessarily represented cases of offsetting errors that were appropriately cured by aggregation. Such instances could also arise if other types of errors were masked by the aggregation process. For these reasons, I felt generally that tests conducted at a lower level of aggregation would be more accurate and more revealing.

In addition, the identification of errors must necessarily precede any effort to evaluate the quantitative significance of those errors. The task of cataloging the errors contained in the MODS data proved itself to be a very substantial task.

Finally, once this cataloging process was complete, I was confronted with an enormous inventory of errors of many different types infecting many different operations and many different time periods. It was by no means clear at that point where a process attempting to separate quantitatively significant from quantitatively insignificant errors should logically begin. In the end. I decided to focus my sensitivity testing on the effects of carrying out productivity and threshold tests at finer levels of temporal aggregation.

1	CHAIRMAN OMAS: This now brings us to oral
2	cross-examination.
3	One participant has requested oral cross of
4	Dr. Neels. Mr. Heselton, will you begin?
5	MR. HESELTON: Yes, Mr. Chairman.
6	CROSS-EXAMINATION
7	BY MR. HESELTON:
8	<pre>Q Good morning, Dr. Neels.</pre>
9	A Good morning.
10	Q I looked over the resume attached to your
. 1	testimony, and I have a couple of general questions
. 2	for you regarding some of the studies you've been
	involved in and use of data in those studies.
i	I take it you've been involved in a variety
	of studies using data for economic analysis. Is that
	Correct?
	A I have been, yes.
8	Q And in some of those studies have you used
19	data that have bee: previously analyzed and worked and
0.0	used and gone over and reviewed and so on basically
22	assembled by similar studies?
22	A If I've been using data collected by someone
2.3	else? Is that what you're asking?
24	Q Basically data that's been used elsewhere;
25	that all the work you've done is not using data that

- 1 you have generated, developed, analyzed and reviewed
- 2 for the first time or in the first instance. Is that
- 3 correct?
- 4 A That's correct.
- 5 Q And I take it that there are in fact some
- 6 studies where you have worked with data which was new
- 7 to that particular study. Is that correct?
- 8 A That's correct also.
- 9 Q All of the things being equal, would you
- 10 expect to find more anomalies, outlier issues and
- problems with data that was being analyzed in the
- first instance as opposed to data that had been
- configured for other studies?
- I don't think I can answer in general.
- Different data sets are subject to different problems
- and have different error rates as a result of those
- problems.
- 18 O Yes, and what I'm asking you here is if you
- 19 were to take data sets and group them into two
- categories -- one is a data set that has in fact been
- used in other studies or analyzed in other instances
- and so on as opposed to data sets which contain data
- which are freshly gathered or perhaps data around
- 24 previously but just not analyzed in that particular
- 25 fashion.

1	That as between these two different sets of
2	data I'm postulating here that the data that was not
3	used before and collected afresh or older data
4	presented in some kind of arrangement not presented
5	before, that in that category of data that you would
6	be more likely to find what you would describe as
7	anomalies or problems of some kind with the data or
8	some kind of other data issues relative to the
9	category of data that had been used in other studies
10	That's what I'm asking here.
11	A $I$ don't think $I$ would agree with that. The
12	more critical issue in my experience is the nature of
1.3	what's being collected and the process whereby it's
14	collected.
15	To just take an example, data collected in
15	survey research. Sometimes some questions are very
17	easy to answer, and it's very easy to solicit clear
18	and unambiguous responses. $An$ example might be a
19	survey that asks people how do you normally get to
20	work? <b>Do</b> you drive, or do you take the subway?
21	Whereas $a$ different kind of a question might
22	ask how much is your house worth at the present time?
23	That's a lot harder for people to answer because it's
24	not something that they're readily familiar with.
2.5	They're estimating it.

1	I think it's really what's being collected
2	and how it's being collected I think in my experience
3	has more to do with the error rate than whether this
4	is a fresh data set as opposed to one which has been
5	analyzed in the past.
6	Q Okay. Well, as I said, other things being
7	equal, and what I had in mind was the kind of factors
8	that you are talking are things that I would equalize,
9	and the only thing I'm looking at here are sets of
10	data that have been looked at before and sets of data
11	that haven't.
12	A Okay. Accepting that clarification, I think
13	again I would say there's no particular pattern, but
14	if a data set has been analyzed in the past there will
15	be more understanding and information around about the
1€	nature of the problem to which it's subject.
17	Q And as a result of that understanding,
18	people will have made adjustments in the way that data
15	is collected and refinement of those. Is that
20	correct?
21	A They may have made adjustments in how it's
22	collected, or they may you know, the collection
23	process may not have changed, and they may instead
24	have made adjustments in how they analyze it or
25	interpret it.

1	Q But at any rate, the fact that those data
2	have been previously used would result in data sets
3	that people are familiar with, have addressed the
4	problems involved, et cetera. Is that correct?
5	A If they've been previously used, you will
6	typically have the benefit of some knowledge and
7	experience gained as a result of the first analysis.
8	Q Okay. Please turn to your testimony at page
9	49.
10	A I have it.
11	Q And specifically there I'm looking at your
12	Footnote 51 where you indicate that you requested data
13	from the Postal Service that would have permitted you
14	to include not just sorting operation hours, but also
15	certain other hours logged in allied and overhead
16	operations, and you indicate there that the Postal
17	Service objected to your request. Do you see that?
18	A I see that.
19	Q And that you were surprised by this
20	response, and you indicated there that this
21	information had a much higher level of aggregation,
22	and you assumed it would be easier to prepare. Do you
23	see that also?
24	A I see that.
25	Q Yes. Are you aware that one of the bases
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1	for the Postal Service's objection was a possible
2	burden of "past experience in working with newly
3	assembled data sets suggested the likely need for
4	extensive review and work after the set was initially
5	assembled." Were you aware of that?
6	A I think I recall having seen something of
7	that sort.
8	Q Okay. And therefore you would also be
9	aware, having referred to that response to being aware
10	of what was ir.the Postal Service's objection, that
11	the request came to the Postal Service 24 days after
רי	the close of discovery on Witness Bozzo's testimony?
<u>1</u> 3	Is that correct?
14	A That's correct
15	MR. MCKEEVER: Mr. Chairman, I might note
16	that discovery on the Postal Service, of course, still
<b>4</b> 77	continues to this day.
18	MR. HESELTON: Mr. Chairman, I feel the
19	Postal Service ought to respond to that statement. I
20	observed in fact that United Parcel Service could have
21	filed that as an institutional interrogatory to the
22	Postal Service, and they chose not to do that.
23	That's one of the reasons the Postal Service
24	put in its objection the burden argument that the

assembly of such data that hadn't been looked at that

25

1 way before would entail some surprises and unexpected observations and result in the possibility for more 2 work there. 3 I suspect that that's the reason that United 5 Parcel Service directed that interrogatory to Dr. Bozzo, who could have dealt with those issues, whereas 6 had they directed it as an institutional interrogatory 7 8 to the Postal Service would have been provided as requested, of sourse, but it would not have received the kind of analysis and review that it would have 10 received had it been directed to Dr. Bozzo. 11 I'd just like the record to reflect that. 1.3 CHAIRMAN OMAS: Thank you. MR. MCKEE'JER: Mr. Chairman, other than to - --say that we considered the circumstances and decided not to move to compel. I don't see how this advances the record in the case, so I will not comment any 16 further. 19 CHAIRMAN OMAS: Thank you, Mr. McKeever. MR. HESELTON: The Postal Service is 21 prepared to move on, Mr. Chairman. CHAIRMAN OMAS: Would you please proceed, 22 23 Mr. Heselton? BY MR HESELTON: 24 0 Dr. Neels, please turn to your testimony at 25

- 1 page 14.
- 2 A I have it.
- 3 Q Now, on that page you're discussing or
- 4 indicating the use of the in-office cost system to
- 5 indicate the prevalence of MODS clocking errors. Is
- 6 that correct?
- 7 A The paragraph that begins on page 14 talks
- 8 about the possibility of using IOCS data to try and
- 9 quantify the incidence of clocking errors. That's
- 10 correct.
- indicating that the Commission in Docket NO. R2000-1
- did a transfer of cost there, and you indicate that
- was "based upon clocking errors disclosed by the IOCS
- 15 data." Do you see that?
- 16 A I see that.
- 17 Q First off, how long have you worked with in-
- 18 office cost system data?
- 19 A I worked with it a small amount in the R2000
- proceeding. This is really the first proceeding in
- which I've delved into it in any detail.
- 22 O Now, in your allegation here that based on
- 23 clocking errors disclosed in the IOCS data you have
- two footnotes on this.
- Let's go back to lines 5 and 6 there.

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- 1 You've got two indications here which are footnoted.
- One is, "The Commission has concluded that the IOCS
- data is more reliable than MODS data." Do you see
- 4 that?
- 5 A I see that.
- 6 O And that is supported or cites to a Footnote
- 7 12, which at the bottom indicates that in Docket No.
- 8 R2000-1 in its opinion and recommended decision at
- 9 paragraph 3015 is your source of support for that
- 10 statement. Is that correct?
- 11 A That's what the footnote says, yes.
- 12 Q Dr. Neels, what I've done here is I've
- copied out the pages from the opinion and recommended
- decision in that docket, including paragraph 3015,
- iust so that we can make this discussion go a little
- bit more smoothly and you've got the context for my
- questions to you regarding paragraph 3015 and two
- others that I would like to refer you to.
- 19 Q Now, let's start out by indicating that
- 20 paragraph 3015 is contained in a section of this
- 21 opinion headed Migration of Window Service and
- 22 Administrative Costs. Is that correct? That would be
- page 81, the first page of the copy that I've given
- 24 you.
- 25 A That's correct.

1	Q Paragraph 3015 is contained within that
2	section, and it indicates the following language at
3	the beginning of that paragraph: "Until then, the
4	direct evidence in the IOCS codes should continue to
5	take precedence over the MODS codes in these cost
6	components."
7	Now, first of all, the Commission's
8	conclusion here applies only to MODS codes in window
9	service and administrative costs and not to MODS codes
10	overall. Is that correct?
11	A It does.
12	Q And noting that that paragraph, 3015, begins
13	with the phrase "Until then," that raises the question
7 4	of what the Commission is referring to until then. If
15	we look above to paragraph 3014 and the last sentence
10	there, the Commission says:
17	"Given the large proportion of general
18	administrative services for which the Postal Service
19	proposes to override IOCS information, the Service
20	should provide some empirical evidence confirming that
21	the portions it proposes to migrate into mail
22	processing solely support Function 1 or 4 mail
23	processing operations."
24	Do you see that?
25	A I do.

1	Q Now, there's no indication in that
2	paragraph, is there, that the Commission has found
3	that MODS codes cannot be used in cost analysis?
4	A No. i would comment though while I'm happy
5	to discuss the migration issue, I would say that this
6	was something of a passing comment as an introduction
7	to my effort to provide a more rigorous quantification
8	of clocking errors, which is presented in Table 3
9	which immediately follows the passage we're
10	discussing.
11	I did not intend to make a large point in
12	citing the migrated cost issue, but, as I said, I'm
13	happy to discuss it with you to the extent I'm able.
. 4	Q Well, my focus here, Dr. Neels, is not on
1 5	the migrating cost issue. My focus is on what I would
. 6	characterize as an overreaching statement that this
17	transfer was based on clocking errors disclosed by the
18	IOCS data.
1 9	What I'm indicating to you at least at this
20	point, in paragraph 3014 and 3015 there is no
2 1	indication in fact that the Commission reached that
22	decision, is there?
23	A If I look at the I think it seems to
24	suggest that the Commission is prepared to accept that
25	these are administrative costs and questions the

1 evidence regarding their relation to mail processing, so I think I would probably concede that this was 2 maybe more of a statement than was warranted. 3 As I said, this was a passing comment. I was trying to just introduce an effort to use the IOCS 5 6 data more rigorously to quantify the extent of misclocking. If I misstated the issue of the migrated 7 cost, I apologize for that. 8 9 Well, Dr. Neels, my concern here is not a 10 misstatement of the issue of migrated cost. My issue here is a general statement that just indicates that 11 the Commission said MODS data can't be useful because 12 13 of clocking errors. That's the statement that I'm addressing. 14 What I'm indicating here and what I'm asking 15 16 you to do is to point to support someplace in here where the Commission in fact concluded that. MR. MCKEEVER: Mr. Chairman, I'll object 16 because I don't see anywhere where the witness' 19 testimony states that. He said MODS data can't be 20 used because of clocking errors. I don't believe the 21 witness' testimony states that. 22 23 The testimony will stand for itself, but he just made a statement that in one instance the 24

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Commission concluded IOCS data is more reliable than

25

- 1 MODS, so I object to the mischaracterization of the
- 2 testimony.
- 3 CHAIRMAN OMAS: Mr. Heselton?
- 4 MR. HESELTON: Mr. Chairman, I'm really
- 5 looking here at the statement on lines 5 and 6 where
- 6 the witness says, "The Commission has concluded that
- 7 the in-office cost system data is more reliable than
- 8 the MODS data."
- 9 That's the general statement that I would
- 10 like to attack. I don't believe that the Commission
- in fact made that: conclusion.
- CHAIRMAN OMAS: I would move on. There was nothing about clacking.
- MR. HESELIO::: Thank you, Mr. Chairman. I will move on

## BY MR. HESELTON:

- O Dr. Neels, would you refer to your
- 18 testimony, please -- strike that. Hang on a second,
- 19 please.
- Let's turn to your response to Postal
- 21 Service Interrogatory No. 28.
- 22 A I have it.
- 23 Q Now, you were asked in that response whether
- it would be surprising to see administrative tasks in
- a list of MODS operations for miscellaneous

- 1 activities, office work, steward meetings, scheme
- 2 examiners and so on, and you answered no, I believe.
- 3 A I did.
- 4 Q Now, suppose there were in-office cost
- 5 system tallies with administrative codes in these
- 6 operations. Would that constitute evidence of
- 7 misclocking?
- 8 A Not necessarily. As I understand the rules
- 9 of engagement for MODS, a worker clocked into a MODS
- operation could legitimately be carrying out some
- 11 activities that could be characterized as
- 12 administrative.
- That was the reason why in the table that I
- 14 presented in my testimony in which I tried to quantify
- the extent of misclocking I focused specifically on
- instances in which a worker was closed into one MODS
- " sorting operation, but was observed working in another
- 18 MODS sorting operation,.
- I separated those tallies from the others,
- 20 which I think would include administrative break time,
- 21 things of that so:, so I recognized the possibility
- that someone clocked into a MODS operation could
- 23 legitimately be handling mail or perhaps engaging in
- 24 some administrative activities related to that
- 25 particular MODS sorting operation

1	Q Okay. So if I take the liberty of
2	summarizing the response you've just given me to a
3	couple of words, your answers to the question of
4	suppose there were IOCS tallies with administrative
5	codes in these operations and would this constitute
6	evidence of misclocking, what you're saying is
7	probably not? Is that correct?
8	A Not necessarily.
9	Q Not necessarily. Now, do you know what cost
10	pool or cost pools those operations are assigned to?
11	A The sperations listed in Interrogatory 28?
12	Q That's correct.
13	A Not off the top of my head.
14	Q Do you know what fraction of in-office cost
15	system administrative tallies are in those operations?
16	A Again, not off the top of my head.
It	Q Okay. And I take it that means you wouldn't
18	even venture a ballpark figure in this case?
19	A I would not
20	Q Okay. Would a figure of about 73 percent
21	sound reasonable to you?
22	A Seventy-three? Can you define what the
23	numerator and the denominator for the 73 percent is?
24	Q Yes. I'm talking here about the fraction of
25	in-office cost system administrative tallies as a

- 1 percentage of operations in administrative codes
- 2 generally in IOCS.
- 3 A So you're saying 73 percent. The numerator
- 4 would be all of the IOCS tallies engaged in
- 5 administrative activities, and the denominator would
- 6 be the entire universe of IOCS tallies?
- 7 Q In mail processing.
- 8 A In mail processing.
- 9 Q In mail processing. We're talking mail
- 10 processing here.
- 11 A So you're saying that that is a factual
- 12 statement? I've lost the question. Excuse me.
- 13 Q My question was when we're looking at the
- fraction of in-office cost system administrative
- tallies in the operations that we've been talking
- about, mail processing operations, I suggested to you
- that would 73 percent sound like a reasonable
- 18 percentage?
- 19 A Sevency-three percent of the MODS tallies
- 20 for mail processing involve administrative activities?
- 21 That seems high to me, but I have not studied that so
- I don't have a very well informed context for
- 23 evaluating it.
- 24 Q Fine. Let's move on to Postal Service
- 25 Interrogatory 27, and specifically here I'm looking at

- 1 Section (d) of that interrogatory where we asked you
- 2 if you considered the administrative costs in sorting
- operations, including clocking in and out, to be
- 4 qualitatively significant.
- 5 In your response you say that the
- 6 administrative activities are less than one percent of
- 7 the cost and so my question here is is that response a
- 8 no?
- 9 A I would call that a no. I have the
- qualification that \$32 million is still \$32 million.
- 11 Relative to \$4 billion, it's not quantitatively
- 12 Significant.
- 13 O Now I'd like you to turn to page 15 of your
- 14 testimony. On that page there should be a Table 3 --
- 15 A Yes.
- 16 Q -- if I've directed you to the correct place
- here.
- 18 A There is.
- 19 Q Can you specify what MODS sorting pool
- 20 definitions you used in developing that table?
- 21 A In developing this table, I sought to use
- 22 the MODS pool definitions that were the same as those
- used by Dr. Bozzo.
- 24 I recognize that in subsequent
- interrogatories it was pointed out to me that there

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- were I think two instances in which I may have omitted
- one particular component of those pools, but my goal
- was to mirror the pool definitions used by Dr. Bozzo
- 4 in his analysis.
- 5 Q Would you turn now to page 16?
- 6 A I have it.
- 7 Q And specifically lines 9 to 10.
- 8 A I have it.
- 9 Q There you state, "For all operations, total
- 10 piece handlings should always be greater to or equal
- than first handling pieces." Do you see that?
- 12 **A** Yes. It's not quite the exact wording, but,
- 13 yes. I see that.
- 14 Q Was it close enough?
- A Close enough.
- 16 O Now, is this statement based on the
- 17 conceptual definitions of first handling pieces and
- total piece handlings?
- 19 **A** It is.
- 20 Now let's consider automated operations. Up
- above at lines 1 to 4 you note that total piece
- handlings are measured by machine counters, and first
- handling pieces are measured by weighing mail and
- 24 applying conversion factors. Are you with me on that?
- 25 A I'm with you.

1	Q Okay. Does it follow that while first
2	handling pieces and total piece handlings are related
3	conceptually as you mention at lines 9 to 10 that
4	they're actually measured using separate systems, as
5	you described in lines 1 to 4?
6	A Yes, I understand that.
7	Q Okay. So let's consider a batch of mail.
8	It's weighed for first handling piece. The weight is
9	converted to pieces and then it's run on the machine,
10	and the successful sorts from the machine's counter
11	are the associated total piece handlings.
. 2	Is this consistent with the process you
	describe at lines 1 to 4?
<b>-</b> *†	A It would be.
	Q Okay. Now let's assume for the moment that
	the mail is weighed correctly, the employee who does
<b>=</b>	the conversion applies the correct conversion factor
18	and that the expected value of the conversion error is
9	zero, but the conversion factor itself happens to be
10	too high for thar particular batch of mail.
21	Do yo: agree in such a case the measured
12	first handling prece exceeds the true first handling
23	piece for that batch?
24	A Now, to answer clearly I assume when you use

the term conversion factor you're talking about a

25

- measure which would be pieces per pound? In other
- 2 words, pieces in the numerator/weight in the
- 3 denominator?
- 4 O That's correct. The kinds of conversion
- factors that you find in the MODS system, yes.
- 6 A **So** in such a case it would be the case that
- 7 the estimated FHP would exceed the TPH as generated or
- 8 as counted by the machine counter
- 9 Q Let's move now to your response to
- 10 Interrogatory 7. Do you have that?
- 11 A T have that.
- 0 Okay. Referring to your response there,
- what you refer to where, would you call those apparent
- anomalies?
- I think in my response to subpart (e) I used
- the term apparent anomalies to refer to situations in
- which FHP exceeds TPH solely because the applied
- 18 conversion facto:- 1s incorrect for that particular
- 19 batch of mail.
- 20 O Yes. Yes, that's what I would like to
- 21 direct your attention to
- Now, would you expect the frequency of these
- anomalies to be higher, other things being equal, if
- the true TPH, total piece handlings, exceeds the true
- 25 first handling pieces by **a** small amount than if the

- 1 true total piece handlings exceeds true first handling
- 2 pieces by a larger amount?
- 3 MR. MCKEEVER: Mr. Chairman, I apologize,
- 4 but for my benefit may I ask Mr. Heselton to repeat
- 5 that question maybe a little bit more slowly? I had
- 6 difficulty following at the speed with which he was
- 7 moving.
- 8 MR. HESELTON: Yes. I'd be happy to, Mr.
- 9 Chairman.
- 10 CHAIRMAN OMAS: Thank you.
- 11 BY MR. HESELTON:
- 12 O Referring to the anomalies referred to in
- your response to Interrogatory 7(e), would you expect
- the frequency of these anomalies to be higher, other
- things being equal, if true TPH exceeds true FHP by a
- small amount than if true TPH exceeds FHP by a large
- 17 amount?
- 18 A I would.
- 19 O Now let's consider the optical character
- 20 reader operation. Is it your understanding that is
- the first sorting operation that most pieces are
- 22 handled on?
- 23 A I would not imagine that it would be the
- 24 first sorting operation that barcoded pieces would be
- 25 handled on

1	Q Okay. Let me clarify the question here. I
2	may not have characterized it correctly.
3	Is it your understanding that is the first
4	sorting operation for most pieces handled on it?
5	A I would expect so.
6	Q Okay. And would that imply that most of the
7	pieces processed on optical character readers would be
8	eligible for a first handling piece count as you
9	understand the first handling piece count measurement
10	procedures?
11	A Again, I would expect so.
مقابلا	Q Okay. And it's also your understanding that
10	the successfully processed pieces on that piece of
14	equipment are sent to barcode sorter operations for
15	subsequent processing?
16	A Again, that would be my understanding in
17	general.
18	Q And would that imply that there would be
19	relatively few total piece handlings in the OCR or
20	optical character reader operation that wouldn't also
21	be first handling pieces at least according to the
22	first handling piece and total piece handling
23	definitions?
24	$\mathbf{A}$ $\mathbf{A}\mathbf{s}$ a general statement I would think that
25	would be true.

1	Q Let's consider now the barcode sorter
2	operations. Is it your understanding that some pieces
3	handled on the barcode sorter are first handled in
4	nonbarcode sorter operations such as optical character
5	reader?
6	A That is my understanding.
7	Q And would you agree that subsequent
8	handlings are also common in barcode sorter
9	operations; for instance, for multi-pass delivery
10	point sequencing'?
11	A That would again be my understanding.
12	Q Okay. And would that imply that barcode
13	sorter operations will tend to have more total piece
14	handlings relative to what I would call true first
1.5	handling piece than optical character reader
16	operations?
17	A I would expect in general for that to be the
18	case.
19	Q Okay. Now, other things equal, which would
20	be more susceptible to a first handling piece/total
2 1	piece handling anomaly due to conversion error? Would
22	you expect to find that more in barcode sorter
23	operations or optical character reader operations?
24	A Well, given as we were discussing before, my
25	expectation would be that in general the TPH count
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- 1 would be closer to the FHP count for optical character
- 2 reader operations than for barcode sorter operations
- and so I would expect that the instances in which the
- 4 conversion factors are inappropriate for a particular
- 5 batch of mail would lead to more situations in which
- 6 estimated FHP exceeded machine count TPH for OCR than
- 7 for barcode sorting.
- 8 Q Would you turn now please to Interrogatory
- 9 21?
- 10 CHAIRMAN OMAS: Excuse me, Mr. Heselton.
- 11 Could you tell me about how much longer you have with
- this witness?
- MR. HESELTON: Well, Mr. Chairman, I
- wouldn't want to bet my mortgage on this estimate, but
- I believe I'm looking a somewhere between 15 minutes
- 16 and 25 minutes.
- . CHAIRMAN OMAS: Fine. We'll go ahead and
- we'll wait for you to complete this, and then we'll
- 19 take a lunch break. Thank you. I won't hold you to
- 20 that.
- 21 MR. HESELTON: I appreciate that, Mr.
- 22 Chairman.
- BY MR. HESELTON:
- Q Okay. I believe that we had referred you to
- 25 Interrogatory 21 and specifically Section (a).

1	Now, in your response in that section you
2	contrast your view of Professor Bradley's productivity
3	screens to that of Dr. Bozzo's, and you note at the
4	bottom $of$ the first page and continuing on the second
5	a "lack of external evidence that these observations,"
6	and they're the ones eliminated by the Bradley
7	screens, "lying on the tails of the distribution were
8	in fact erroneous."
9	Do you see that?
.0	A I see that.
. 1	Q Now, in response to Postal Service
	Interrogatory 7(e) you stated that you had made no
	effort to distinguish between actual and apparent
<b>.</b> **	anomalies. Is that correct?
	A Again using the awkward terminology of that
. •	subpart, yes.
	Q And are the "actual anomalies," to use your
. 5	wording from the response to 21(a), "in fact
, <del>G</del>	erroneous" in thar some mistake would have been made
20	in the measurement of first handling pieces and/or
21	total piece handlings?
22	A Could you repeat the question again?
23	Q Certainly. My question is when you refer to
24	"actual anomalies" in your wording to the response to
25	21(a), "were in fact erroneous" in that some mistake
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1	would have been made in the measurement of first
2	handling pieces and/or total piece handlings, does
3	that characterize actual anomalies?
4	A Okay. You had previously directed my
5	attention to the sentence that begins on page 2 and
6	continues onto page 3, and here I was talking about
7	the issue about whether the observations in the tails
8	of the productivity distribution of Dr. Bradley that
9	he omitted from his estimation samples were erroneous.
10	His productivities were calculated on the
11	basis of hours and TPH and didn't involve FPH and so
12	in the context of that sentence I don't think that FPH
13	enters into it at all.
. 4	Q Well, car. you explain why screening out the
. 5	"apparent anomalies" in the absence of evidence that
10	the observations are what you call "actual anomalies"
-	wouldn't be subject to exactly the critique that you
18	previously leveled with Dr. Bradley that you would
19	eliminate large numbers of observations that you
20	haven't actually determined to be erroneous?
2 1	A Well, I think I would take issue with that
22	because in the empirical work I did I was using first
23	handling pieces as a cost driver, and all I have is
24	the estimated first handling pieces. I don't have the
25	actual first handling pieces.

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1	I think the fact that the estimated first
2	handling pieces for a particular observation exceed
3	the total piece handlings for that particular
4	observation is evidence that the particular number
5	contained in the data set for first handling pieces is
6	incorrect.
7	If I had had the true, as opposed to the
8	estimated, I would have been happy to use the true,
9	and it wouldn't have been necessary to apply that
1 0	screen. Having only the estimated, which I would know
11	to be incorrect, I think it's appropriate to eliminate
12	them from the sample.
13	Q Please turn to your response to
14	Interrogatory 5. In 5(a) we asked you to provide an
15	estimated equation for the models you present in
16	Section 6 of your testimony.
17	A I have that.
18	Q Is a feature of that equation that it
19	includes the log of first handling piece volumes for
20	letters, flats and parcels on the right-hand side?
21	A It is.
22	Q Now turning to your response to $5(b)$ , the
23	first variation on the model you describe is what you
24	call a "shape level" version. Is that correct?
25	A That's correct.

1	Q And is it correct that you used only a
2	single shape specific cost driver in these models?
3	A That's correct.
4	Q Now, in your testimony you theorize there
5	may be cross shape effects that are not captured by
6	Postal Service models among other things, and here for
7	a specific reference this is in your testimony at page
8	49 and 50.
9	A That's correct.
1 0	Q Now, if you had included all three first
11	handling piece shape variables as you noted in the
12	response to 5(a) could those models have provided
1 3	evidence to confirm or not confirm your theory that
14	there were cross shape effects in sorting operations
15	costs?
· ¢	A Just to make sure I understand, you're
17	asking me a question about a hypothetical model that I
18	did not run, and that hypothetical model would look
L 9	like the equation shown under part (a), but instead of
20	having the total number of labor hours it would be the
21	labor hours associated with all of the sorting
22	operations for a specific shape?
23	Just: to clarify, is that your question?
24	Q That's correct.
25	A Okay. And the question is would that
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1	provide evidence of cross pool interaction? Again, am
2	I with you?
3	Q Yes.
4	A Thank you. I think it would provide some
5	evidence regarding the possibility of cross pool
6	interactions, but the test would not encompass all
7	possible forms of cross pool interaction.
a	I noted in connection in my direct testimony
9	in discussing situations in which I reestimated Dr.
10	Bozzo's models on subsamples, some of which would
11	include automation operations and some of which would
12	not, I noticed that there were significant differences
13	in the coefficients one arrived at.
14	I think as part of the discussion there I
15	pointed out that contrasting, for example, the cost
16	characteristics of a manual operation when it is the
17	only operation in place versus that same manual
18	operation when it's operating beside an automated
19	operation is a test that the split sample approach
20	could carry out.
21	The model that you've postulated as an
22	alternative here would not be able to address that
23	because by definition you would only be able to
24	estimate such a model in situations in which the
25	operations were running side-by-side.

1	Now, the discussion in my direct testimony
2	talked about different sorting operations within a
3	shape, but I think the same sort of considerations
4	would apply if you're looking at different shape
5	streams.
6	If there was only one shape stream present
7	or only two shape streams present and a third is
8	introduced, that might change the cost characteristics
9	of the other two in a way that would not be captured
LO	by the model you've asked about.
L1	Q Please turn to your response to Postal
<u>م</u> .	Service Interrogatory 33, and here I'm looking at
. 3	Section (b).
. 4	A I have it.
5	Q Okay. You begin your response here, "Every
.6	mail piece that requires sorting must be sorted for
.7	the first time somewhere and so should generate one
. 8	first handling piece count."
. 9	Do you have that?
0	A I have that.
21	Q Okay Is it your view that each piece
22	requiring sorting generates one and only one first
23	handling piece count regardless of how many Postal
24	Service facilities it passes through?
25	A No, and I think I tried to make that clear
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- in the remainder of my response to that part of the
- 2 interrogatory.
- 3 Q Now please turn to your response to Postal
- 4 Service Interrogatory 36.
- 5 A I have it.
- 6 Q You're ahead of me, Dr. Neels. And
- 7 specifically to page 5 on that response.
- Now, unfortunately I don't have line numbers
- 9 to refer you to there, but you refer to "the
- 10 conversion factor for first class mail."
- 11 **A** I do.
- 12 Q Let me see if I can get you a count here on which line it is. Okay. Count up 10 from the bottom
- would be the shortest way to do it there
  - The line itself says, "...per piece has
- .. Increased." And then, "If the conversion factor for
- first class mail is correct..." Do you see that?
- 18 A I see thar.
- 19 Now, are you suggesting by this sentence
- that there is a single conversion factor applicable to
- first class mail:;
- A By no means, no.
- MR. HESELTON: Thank you, Dr. Neels.
- Mr. Chairman, that completes the Postal
- 25 Service's cross-examination of this witness.

1	CHAIRMAN OMAS: That was 10 minutes. Thank
2	you, Mr. Heselton.
3	Is there anyone else who wishes to cross-
4	examination Dr. Neels?
5	(No response.)
6	CHAIRMAN OMAS: Are there any questions from
7	the bench? Commissioner Goldway?
8	COMMISSIONER GOLDWAY: I hope I get this
9	right because I'm certainly not a professional
10	economist, but the Commission is always concerned
1.1	about accuracy of data in its review of decisions
12	before it makes them.
13	Witness Bozzo looks at MODS data at the
] - <del>i</del>	level of individual operations and decides that
19.	roughly 25 pel-cent of them are obviously bad because
16	of extreme or nonsensical values.
17	As you show in Table 20 of your testimony,
18	you look at shape level MODS data and conclude that 40
19	percent of them thar involve either letters or flats
20	are bad because they are extreme or nonsensical. For
21	parcels, the obviously bad data appears to be over 50
22	percent.
23	The question that our staff has been
24	discussing is assuming you can expect bad MODS data to
25	be distributed something like a bell curve where the

1	extreme values are relatively rare and the majority of
2	bad observations aren't as obviously different from
3	good observations and therefore can't be detected
4	that's a question.
5	Could these errors be distributed in a bell
6	curve such that in the center of the bell curve it's
7	harder to figure out if they're bad or not?
8	THE WITNESS: I think certainly that's a
9	possibility. This is an issue I have struggled with,
10	and I think I mean, to give you an honest answer, I
11	think there are two countervailing tendencies.
12	I don't understand all of the problems with
13	the MODS data that gave rise to the visible errors.
14	Sometime it appears things are not entered. Sometimes
15	they're entered in the wrong place.
16	If you take the latter issue of things where
17	volume or hours that should be recorded under one
18	operation are recorded elsewhere that means one
19	observation is too high and one observation is too
20	low.
21	I've always been concerned that, you know,
22	if we see the whole we don't necessarily see the place
23	where the volume or the hours wound up and that that
24	could be a concern.
25	Now, offsetting that it is the case that if
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- things are just recorded in a sloppy manner then at 1 some level it should all add up to the right number, 2 but I'm not sure what level that is. 3 You know, there's been some talk about offsetting errors at a detailed level that cancel out 5 at a higher level. There's also some evidence that 6 things don't make their way into the system, and that 7 would not be corrected by that. 8 There is a process too of the data are 9 recorded at least on a four week basis and aggregated 10 up to a quarterly level and I think recorded weekly as 11 12 well. I don't know how much masking occurs at those higher levels. 13 I think it's certainly a possibility that 14 there could be other errors that are not obvious and 15 even that was referred to in the cross-examination by 1€ Mr. Heselton when he talked about the fact that FHP is more -- you know, an inaccurate estimate of first 18 15 handling pieces is likely to be more visible if total piece handlings are close to what FHP is. 20 Never having really understood the nature of 21 22 the problems, I've never been comfortable that we
- 25 COMMISSIONER GOLDWAY: Okay. So in the

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23

24

bad.

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could really get our hands on what's good and what's

1	example you gave, we can assume that certain problems
2	are more visible than others?
3	THE WITNESS: Yes.
4	COMMISSIONER GOLDWAY: But I guess the
5	question is once you see a pattern of very visible
6	errors and you're automatically taking the outliers,
7	oughten there be some way in which you assume that
8	there's also a Sell curve of those errors within the
9	data and some formula that you might adapt to adjust?
LO	You know, you've cut the bell curve off so you're
11	using this arch.
.2	THE WITNESS: Yes.
. 3	COMMISSIONER GOLDWAY: But you've seen these
. 4	huge outliers that you've cut out, so is there some
	way in which you say well, a certain portion of the
i6	data inside the remaining bell curve must also be
17	incorrect, and therefore we have some sort of formula
18	to push the bell curve down?
1 9	THE WITNESS: I think if I understand your
20	question, if you wanted to build some you know, use
2 1	the visible errors to infer the presence of the
22	nonobvious errors.
23	COMMISSIONER GOLDWAY: Right.
24	THE WITNESS: One could do that under some
25	strong assumptions. If you assume that there's the

1	same probability that a weekly observation would be
2	off sufficiently that it would be visible, you could
3	calculate the probability that for how many
4	observations would there be enough weeks that were off
5	that you would see a problem at the quarterly level?
6	That would enable you to make some
7	inferences, but that rests upon some pretty strong
8	assumptions about the nature of the problem. I'm not
9	sure that I would be comfortable saying that those
1 0	kinds of assumptions are warranted. Those are things
11	you would need to do to get to an answer.
12	As I said, it is possible that if this is
13	just a matter of sloppiness about where hours or
14	volume are recorded it's possible that, you know,
15	again at some level of aggregation these things might
16	cancel out.
17	I've noticed, for instance, that there are
18	negative values. Although I've never gotten
15	confirmation that that's an adjustment, it looks like
20	an adjustment where somebody caught an error and later
21	deducted it.
22	If you put those together, you presumably
23	get the right answer, but I think that where I come
24	out on this is I'm concerned that there are nonvisible
25	errors, but I don't feel that I know enough about the
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1	way in which these get generated to be able to be
2	confident that I can quantify them or ferret them out.
3	COMMISSIONER GOLDWAY: If we were able to
4	quantify them, could it possibly dramatically change
5	the MODS information we have?
6	THE WITNESS: I mean, it could potentially.
7	I've wondered whether I'm making too much about the
8	errors or not, but I recall Professor Greene in 2000
9	performing some calculations that indicated that
10	measurement error was unlikely to be a big issue, and
11	yet when Professor Roberts has corrected for
15	measurement error using instrumental variables he gets
11	significantly different results.
<del></del> -	I guess I'm left with the concern that it is
	a Dig problem that could potentially alter the
	results.
	COMMISSIONED GOLDWAY: Thank you.
18	CHAIRMAN OMAS: Commissioner Tisdale?
19	VICE CHAIRMAN TISDALE: Yes. Dr. Neels, in
20	the past we know that the Postal Service has been
2:	known to shift workloads from one plant to another to
22	avoid congestion and some other operational problems.
23	The plant level MODS data that we've seen in recent

years seems to indicate that that continues to be a

24

25

practice.

1	If that is so, does it mean that the
2	operations level and plant level models measure only
3	part of the effects of volume on cost?
4	THE WITNESS: Well, I think if the practice
5	is to move operations from let's say more congested
6	facilities to less congested facilities then I would
7	think the plant level models would not necessarily be
8	giving you know, would presumably be giving you an
9	accurate picture of what's going on.
10	If you're talking about changing the network
11	of plants, adding plants or removing plants, then I
12	think there could be costs associated with changes of
13	that nature that would not be captured by plant level
14	models.
15	You know, I think as long as you're shifting
16	volumes around within an existing network presumably
17	if the models are accurate you'll be getting a correct
18	picture of the effects on cost.
19	VICE CHAIRMAN TISDALE: So you don't think
20	that the cost would be lost in the system somewhere?
21	THE WITNESS: Well, it raises an issue which
22	I've been concerned about, which is changes in the
23	structure of the network. I'm not convinced that the
24	models that the Postal Service has put forward
25	adequately address the costs associated with those

1 changes. For example, if congestion forced you to 2 3 install a parcel sorting operation at a plant, an automated parcel sorting operation at a plant that had 4 not previously had one, there would be costs 5 associated with bringing the equipment on line, with 6 ramping up, that would be part of the change. 7 8 change is volume related, you know, I think it should be credited as part of the cost of volume growth. 9 I'm concerned that a model that assumed an 10 existing population of plants and also an existing 11 complement of sorting activities would systematically 12 miss those changes, so I think that the cost would 13 possibly fall between the cracks if you're either 14 creating plants or removing plants or if you're 15 16 putting new sorting lines into plants where they had 17 not previously existed because there are costs associated with making changes to the network of that 18 19 nature. 20 However, if it's a static system, if it's a static complement of plants and, you know, each plant 21 has a static complement of activities and the volume 22 is simply moving from one plant to another then I 23 24 would thin!? again as long as the models are adequately designed and estimated they should give you an 25

1	adequate picture of the implications of that.
2	It's when the structure changes that I think
3	that there's a potential to miss things, and that
4	could be either new plants or new sorting activities
5	installed at existing plants.
6	VICE CHAIRMAN TISDALE: Okay. Thank you.
7	COMMISSIONER GOLDWAY: Thank you.
8	CHAIRMAN OMAS: Is there anyone else?
9	MR. HESELTON: Mr. Chairman, the Postal
1 0	Service has an additional question for Dr. Neels.
11	CHAIRMAN OMAS: Okay.
12	CROSS-EXAMINATION RESUMED
13	BY M: HESELTON:
14	Q Dr. Neels, how do you deal with first
<b>ت</b>	handling piece error in your models?
15	A I do it in two ways. I have tried to, first
•	of all, screen out the errors that I can identify and
18	then, having taken the best sample I can find, I then
19	use instrumental variable techniques to try and
20	prevent bias in my coefficients.
31	MR HESELTON: Thank you, Dr. Neels.
2 2	CHAIRMAN OMAS: Thank you. Is there anyone
23	else?
24	(No response.)
25	CHAIRMAN OMAS: Mr. McKeever?
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1	MR. MCKEEVER: Five minutes, Mr. Chairman?
2	CHAIRMAN OMAS: Fine. Thank you.
3	(Whereupon, a short recess was taken.)
4	CHAIRMAN OMAS: Mr. McKeever?
5	MR. MCKEEVER: Mr. Chairman, we have no
6	redirect.
7	We have one matter before we move on to the
8	next witness if I may though. If I understood counsel
9	for the Postal Service earlier, there was an
10	indication that if we had directed an interrogatory to
11	the Postal Service instead of to Dr. Bozzo that their
12	objection of undue burden may not have applied, and
13	they may have given us the data.
	We of course, as I mentioned, did not file a
15	motion to compel based on a number of factors, the
16	stage of the proceeding and the claim of undue burden,
i 7	but I would like to ask counsel for the Postal
18	Service, and I'm not looking for an answer today.
19	I wouldn't want to put counsel on the spot,
20	but if we were to reserve that interrogatory discovery
2 1	on the Postal Service of course does not conclude
22	until November 17. If we were to reserve that
23	interrogatory on the Postal Service rather than take
24	Dr. Bozzo's name off it, put the Postal Service on it,
25	would they respond?

1	If I could ask the Postal Service to get
2	back to us, I would appreciate that.
3	CHAIRMAN OMAS: Mr. Heselton?
4	MR. HESELTON: Mr. Chairman, the Postal
5	Service doesn't mind being put on the spot in this
6	particular instance, and the reason that the Postal
7	Service wrote the objection to the interrogatory in
8	the way it did in fact was to indicate that it
9	anticipated that by virtue of the fact that the
1 0	interrogatory required a compilation of data that had
11	not been done before that there would be a number of
12	unforeseen problems that would emerge in that that
13	would require a considerable amount of effort and
· •	would raise issues in fact that would require
1=	considerable analysis and so on that would make the
16	response not particularly appropriate for an
_ 1	institutional interrogatory.
18	In other words, it would be the kind of
19	response that somebody would have to have a witness
20	attest to in order to make it useful. For that
2 1	reason, the Postal Service would in fact resist such
22	an interrogatory.
23	MR. MCKEEVER: I gather that the Postal
24	Service is indicating that it would still object if we
25	serve the interrogatory to them as an institution.

1	CHAIRMAN OMAS: Yes. I was under the
2	impression
3	MR, MCKEEVER: ${f I}$ had gleaned that they had
4	indicated they might have responded if we had made it
5	an institutional.
6	CHAIRMAN OMAS: Yes. I was a little
7	confused as well because I thought you didn't want it
8	to go to an individual, but if it had gone to an
9	institutional there would have been a better chance.
10	Do you want to think about this and get back
11	to <b>us</b> on this, Mr. Heselton?
12	MR. HESELTON: Well, perhaps my first
	remarks on this issue were a little less articulate
<u> </u>	than I wish they had been, but when that interrogatory
· :	came in the Postal Service viewed it as in fact an
· *	interrogatory that would be quite appropriate to ask a
	witness because of the possible difficulties and
<u>.</u>	issues that would be involved in compiling the data
19	requested.
2 C	The problem the Postal Service had at that
21	point in dealing with it that way was that it was
22	filed 24 days after the close of discovery on Witness
23	Bozzo. An order::, process before this Commission
24	requires some adherence to its timeline and so that
25	was one of the bases or the basis of objecting to the

Ţ	interrogatory at that point.
2	The Postal Service did regard that
3	interrogatory as one that really ought to be directed
4	to a witness rather than to the Postal Service as an
5	institution. Had the interrogatory requested a data
6	set that was just available, something that could be
7	taken and supplied to the United Parcel Service, that
8	would have beer a different story, but that's not the
9	way the Postal Service viewed this particular
LO	interrogatory.
L 1	MR. MCKEEVER: Mr. Chairman, just two more
12	sentences, and then I don't think I have any more to
1.3	sa:; on this.
4	First, we requested the data in order to do
5	own study. That's why we wanted data that the
1.6	Postal Service had not used in its study, and we were
1 ¬	requesting that data so we could do our study to
l 8	address some of the problems that we were seeing.
19	I think maybe the best way to resolve this
20	at this point, since the discovery deadline to the
21	Postal Service is still not closed, is we'll reserve
22	it and then we'll <b>see</b> if we get another objection and
23	what the basis $is$ and decide at that point whether we
24	wish to pursce it or not.
25	CHAIRMAN OMAS: I think that's good. Thank
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1
      you very much, Mr. McKeever. Thank you, Mr. Heselton.
 2
                With that we will take a lunch break and
      come back around 1:30.
 3
                Excuse me.
                             I need to excuse you, Mr. Neels.
 4
      I'm sorry. We get carried away with these
 5
      conversations. I forget that you're sitting there.
 6
                Mr. Neels, thank you very much for your
      testimony today and your contribution to our record.
 8
 9
      We appreciate it, and you are now excused.
                THE WITNESS: Thank you for allowing me to
10
11
      speak.
12
                CHAIRMAN OMAS:
                                 Thank you.
                 (Witness excused.)
13
                CHAIRMAN OMAS: At that we will take a one
15
      hour lunch break. We'll be back at 1:30. Thank you.
16
                 (Whereupon, at 12:30 p.m. the hearing in the
17
      above-entitled matter was adjourned, to reconvene at
18
      1:30 p.m. this same day, Friday, October 27, 2006.)
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1	<u>AFTERNOON SESSION</u>
2	(1:35 p.m.)
3	CHAIRMAN OMAS: Mr. Olson, would you
4	introduce your witness, please?
5	MR. OLSON: Yes, Mr. Chairman. Valpak calls
6	to the stand Dr. John Haldi.
7	CHAIRMAN OMAS: Mr. Haldi, would you please
8	raise your right hand?
9	Whereupon,
10	JOHN HALDI
11	having been duly sworn, was called as a
12	witness and wan examined and testified as follows:
<u>:</u> 3	CHAIRMAN OMAS: Please be seated.
14	Mr. Olson?
10	DIRECT EXAMINATION
16	(The document referred to was
17	marked for identification as
18	Exhibit No. VP-T-2.)
19	BY MR. OLSON:
20	Q Dr. Haldi, do you have before you two copies
21	of what is identified as the Direct Testimony of Dr.
22	John Haldi Concerning Certain Issues Pertaining to
23	Mail Processing Costs on Behalf of Valpak Direct
24	Marketing Systems, Inc. and Valpak Dealers Association
25	designated as VP-T-2?

1	A Yes, I do.
2	Q And do you have any corrections to this
3	testimony filed September 6?
4	A Yes. I have one I think minor correction.
5	On page $36$ , Table 1, line 11, the reference there is
6	to an AFSM 1000, and that should be an AFSM 100. That
7	is it.
8	Q And with that correction, do you adopt this
9	as your testimony in the case?
10	A Yes, I do.
11	MR. OLSON: Mr. Chairman, based on that,
12	we'd like to move the adoption into evidence of this
13	testimony on behalf of Valpak.
i	CHAIRMAN OMAS: Is there objection?
15	(No response.)
16	CHAIRMAN OMAS: Hearing none, I will direct
17	counsel to provide the reporter with two copies of the
18	corrected direct testimony of John Haldi.
19	That testimony is received into evidence.
20	However, as is our practice, it will not be
21	transcribed.
22	(The document referred to,
23	previously identified as
24	Exhibit No. VP-T-2, was
25	received in evidence.)

1	cyberspace epsilon.				
2	With that minor change, there are no other				
3	changes.				
4	CHAIRMAN OMAS: And there are no other				
5	additional corrections?				
6	THE WITNESS: No, sir.				
7	CHAIRMAN OMAS: We can understand that				
8	fully. Yesterday our technical people could not get				
9	Nu to come out. We had a question mark. Delta came				
10	out as D, ana Nu came out as a question mark. We can				
11	fully understand that.				
	There being no corrections or additions,				
	counsel, would $you$ please provide two copies of the				
- '1	corrected designated written cross-examination of				
- -	Witness Haldi to the : eporter?				
1.	The material is received into evidence and,				
	as is our practice, is to be transcribed into the				
18	record.				
19	(The document referred to was				
20	marked for identification as				
2:	Exhibit No. VP-T-2 and was				
22	received in evidence.)				
23	//				
24	//				
25	11				

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# BEFORE THE POSTAL RATE COMMISSION WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes, 2006

Docket No. R2006-1

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF VALPAK DIRECT MARKETING SYSTEMS, INC. AND
VALPAK DEALERS' ASSOCIATION INC.
WITNESS JOHN HALDI
(VP-T-2)

Party <u>Interrogatories</u>

Postal Rate Commission USPS/VP-T2-1-23

United Parcel Service USPS/VP-T2-1, 4-10, 12-14, 17, 19-21

United States Postal Service USPSNP-T2-1-23

Respectfully submitted,

Itu a conseen

Steven W. Williams

Secretary

# INTERROGATORY RESPONSES OF VALPAK DIRECT MARKETING SYSTEMS, INC. AND VALPAK DEALERS' ASSOCIATION INC. WITNESS JOHN HALDI (T-2) DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory	Designating Parties
USPS/VP-T2-1	PRC. UPS, USPS
USPS/VP-T2-2	PRC, USPS
USPS/VP-T2-3	PRC, USPS
USPSNP-T2-4	PRC. UPS, USPS
USPS/VP-T2-5	PRC, UPS, USPS
USPS/VP-T2-6	PRC, UPS, USPS
USPSNP-T2-7	PRC, UPS, USPS
USPS/VP-T2-8	PRC, UPS, USPS
USPS/VP-T2-9	PRC, UPS, USPS
USPS/VP-T2-10	PRC. UPS, USPS
USPS/VP-T2-11	PRC, USPS
USPS/VP-T2-12	PRC, UPS, USPS
USPS/VP-T2-13	PRC. UPS, USPS
USPS/VP-T2-14	PRC, UPS, USPS
USPS VP-T2-15	PRC, USPS
USPS/VP-T2-16	PRC. USPS
USPS'VP-T2-17	PRC, UPS, USPS
USPS'VP-T2-18	PRC. USPS
USPS/VP-T2-19	PRC. UPS, USPS
USPS/VP-T2-20	PRC, UPS, USPS
USPS/VP-T2-21	PRC, UPS, USPS
USPS/VP-T2-22	PRC. USPS
USPS/VP-T2-23	PRC. USPS

### USPS/VP-T2-3.

Please refer to your testimony at page 21, lines 4-5. Please confirm that the cost elasticity with respect to output.  $\ln c(w,y) / \ln y$ , is defined if c(w,y) is a differentiable short-run cost function. If you do not confirm, provide a mathematical derivation of the result you believe to be correct.

### Response.

Confirmed: also see my response to USPS/VP-T2-1(b)

#### USPS/VP-T2-4.

Please refer to your testimony at page 21, lines 10-15.

- a. Please confirm that you are describing a "U-shaped" short-run average cost curve. If you do not confirm, please explain.
- b. Please confirm that the long-run average cost curve may also be U-shaped. (See, e.g., Hal **R.** Varian, *Microeconomic Analysis*, *Second Edition* [New York: W. W. Norton] at pages 38-39 and page **43.**) If you do not confirm. please explain.
- c. Please also refer to your testimony at page 25, lines 2-3. Please confirm that, in microeconomic theory, the long-run average cost curve specifically is the <u>lower</u> envelope **of** the short-run average cost curve. (See, e.g., Varian, op. cit., at page 43.) If you do not confirm, **please** explain.

### Response.

- My testimony is intended to describe a unit cost curve that declines (perhaps gradually, perhaps sharply) over some range of output, then reaches a minimum (which may remain constant over an extended range), and then starts increasing after the plant has reached full utilization of its most efficient equipment and then must rely on less efficient, more costly equipment and procedures to reach higher levels of output. Once unit cost starts to increase, that rate at which it increases may be gradual or steep, depending on the particular circumstance at the time. The decline and ultimate increase in unit cost may be shallow or sharp with a wide, flat bottom, and the cost curve may be far from symmetrical
- b. Confirmed, see also my response to interrogatory 4(a), ahove
- Confirmed

#### USPS/VP-T2-5.

Please refer to your testimony at pages 22-23.

- a. Please confirm that in the economic "long run," the Postal Service would not he bound by capacity constraints that might force it to employ less efficient processing technology in the "short run." If you do not confirm, please explain.
- b. Your statements regarding the possibility of the Postal Service employing less efficient technologies such as manual sorting in the short run do not reference to any quantitative data on the prevalence with which the Postal Service actually does so. If your statements are based on any quantitative data, please provide detailed citations to the data. If not, please so indicate.

#### Response.

- a. "In the long run we are all dead," Thus wrote Lord Keynes. I can confirm, though, that we are not all dead yet, and I also can confirm that, given sufficient time, the Postal Service can expand its mail processing capacity beyond existing short run capacity constraints. However, the "long run," or "sufficient time" required to expand capacity may extend over the span of several rate cases (and well beyond the Test Year in any given case), as attested by the chronic shortage of mechanized flats processing capacity throughout the 1990's.
- The table below, which is based on the data in Table 1 at page 36 of my testimony, summarizes both total and volume variable costs for tlars, letters, parcels, and Priority Mail in FY 2005, torall cost pools studied by witness Bozzo. For all mail processing cost pools combined, those characterized as "manual" amounted to a non-trivial one-third of both total and volume variable costs

Response to USPS/VP-T2-5b

# FY 2005 Total Costs (\$,000)

	(1)	, ,		(3)	(4)
	Manual	Automated/ Mechanized	Total	Percent Manual	
Flats (1)	239,251	756,916	996,167	24.0%	
Letters (2)	01'7,249	1,683,563	2,600,812	35.3%	
Parcels	83,115	410.170	493,285	16.8%	
Priority	317,740	145.691	463,431	68.8%	
Total	1,557,355	2,996.340	4,553,695	34.2%	

# FY 2005 Volume Variable Costs (\$ ,000)

	(1) Manual	(2) Automated/	(3)	(4) Percent
		Mechanized	Total	Manual
Flats (1)	224,896	690,454	915,350	24.6%
Letters (2)	816,352	1,466,453	2,282,805	35.8%
Parcels	66.492	356.848	423,340	15.7%
Priority	238,305	126,751	365,056	65.3%
Total	1,346,045	2.640.506	3,986,551	33.8%

<sup>(1)</sup> Column 2 = AFSM 100 + FSM 1000

<sup>(2)</sup> Column 2 = BCS/DBCS/CSBCS + OCR

#### USPS/VP-T2-6.

Please refer to your testimony at page 26, line 12, to page 27, line 1. You state:

Any increases or decreases in unit cost on account of such other exogenous factors [described by witness McCrery] should not be interpreted as evidence tending to prove or disprove the existence of economies of scale. [Emphasis in original.]

Please also refer to GAO report GAO-05-261, provided as Docket No. N2006-1, USPS-LR-N2006-1/7, at page 30, where a graph shows facility productivities for \*small," "medium" and "large" facility categories.

- a. Do you agree that the GAO's graph referenced above shows a lower average productivity for "large" sites than for sites in the smaller size categories? If not. please explain.
- b. Please assume that exogenous factors such as you describe in your testimony account for the observed average productivity differences by facility size. Under such circumstances, please confirm that your testimony, quoted above, implies that it would be incorrect to conclude that there are diseconomies associated with large facilities from productivity data such as that presented by GAO. If you do not confirm. please explain fully.

#### Response.

- a. I would agree
- b. Under the assumption posited here, that exogenous factors account for observed average productivity differences by facility size, it clearly would be incorrect to conclude that larger facilities are subject to systematic diseconomies of scale. At the same time, and despite the GAO's own caveats at pages 28-32, in the face of such data any conclusion that postal facilities are subject to economies of scale would require a blind leap of faith.

#### USPS/VP-T2-7.

Please refer to your testimony at page 29, lines 3-9. Assume a facility is merging outgoing processing of its First-class Mail and Standard Mail. Would you expect a single-unit increase in the Standard Mail volume to be sufficient to cause such a facility to cease merging the processing, or would a larger increment of volume normally be required?

Response.

Your question does not indicate whether the facility is merging flats or letters, so I shall attempt to address both. First, however, let me establish some relevant parameters

According to witness McCrery:

a minimum volume of three to four thousand pieces is necessary to son flats on a particular sort scheme. Below that number. consolidation with flat mail from another class would be considered if feasible. [Tr. 11/3135.]

For letters. witness McCrery states that:

10 minutes **of** mail is a good rule **of** thumb, but that differs significantly with the situation. [Tr. **1113134.1**]

Throughput of **DBCS** machines is approximately **37,000** pieces (letters) per hour **Tr. 11/3104**; USPS-T-42, p. 6, 11. 13-14. Since 10 minutes is one-sixth of an hour, 10 minutes of mail would be approximately **6.000** pieces (which can vary significantly with the situation).

Your question asks what I would expect from a "single-unit" increase in Standard Mail volume, without defining the term "single-unit." If by single-unit you intend a single piece of mail, my answer is: No, in general I would not expect just one additional piece of Standard Mail to be sufficient to cause a facility to cease merging the

processing. Suppose however, that a single-unit is defined as a rate-induced volume change, such as 1,000 additional pieces of Standard Mail. Then, if we assume that some small volume of Standard Mail already exists and is being merged with First-Class Mail, (i) for flats I would say that the chances are at least 1 in 3 (1,00013,000) that an additional "unit" might be sufficient, and (ii) for letters I would say that the chances are better than 1 in 6 (1,000/6,000) that an additional "unit" would be sufficient to cease merged processing and son the Standard Mail separately.

#### USPS/VP-T2-8.

Please refer to Prof. Bauniol's testimony in Docket No. **R87-1**, **USPS-T-3** at page 10, lines 5-11. Prof. Baumol defines the incremental cost **of** a service as:

Those costs -- fixed and volume variable -- which would be eliminated if the particular service...were (hypothetically) discontinued are called the "incremental cost" of that service.

Do you agree with Prof. Baumol's definition? If not, please explain the basis for any disagreement.

Response.

I agree with Professor Baumol. Professor Baumol's statement is fairly obvious, when all **costs** are defined as either fixed or volume variable. Note, however, that some costs **can** be "semi-fixed" or "semi-variable." The cost function may involve some discontinuities. Such costs may not change at the margin, with small changes in volume. in **a** continuous manner. At the same time, such costs may be reduced or even eliminated altogether well before the particular service were (hypothetically) discontinued and volume disappeared altogether. Such costs do not fit neatly within Professor Baumol's dichotomy.

#### USPSIVP-T2-9.

Please refer to Prof. Baumol's testimony in Docket No. R87-1, USPS-T-3 at page 12, lines 15-19. Prof. Baumol states:

The term "long run marginal cost" does not refer to a particular length of time but instead refers to the marginal costs that would be incurred if all plant, equipment and labor were used in optimal configurations so that costs, for whatever volume of service is supplied, are minimized.

Do you agree with Prof. Raumol's characterization? If not, please explain the basis for any disagreement

### Response.

Provided that we take plants and technology as fixed at some point in time, I would agree with Professor Baumol's characterization. This is a "static" definition of "long-run marginal cost." and is consistent with the envelope cost curve discussed at pp. 25-21 of my testimony.

In a "dynamic" situation, technology may be in a state of ongoing evolution and iniprovement, and the optimal configuration **of** plant, equipment, and labor then will be subject to change on a regular and continuing basis.

#### USPS/VP-T2-10.

Please refer to your testimony at page 42, lines 14-20

- a. Please confirm that there is no single class or subclass whose hypothetical discontinuation would lead to the discontinuation of all letter-shape products. If you do not confirm, please explain fully.
- b. Please confirm that there is no single class or subclass whose hypothetical discontinuation would lead to the discontinuation of all flat-shape products. If you do not confirm. please explain fully.
- c. Please confirm that there is no single class or subclass whose hypothetical discontinuation would lead to the discontinuation of **all** parcel-shape products. If you do not confirm, please explain fully.

### Response.

- a. Confirmed
- h. Confirmed
- c Confirmed. Note, however, that when processing **is** by shape, it is possible for there **to he** (common) costs that can be identified readily with shape but not with a single class or subclass of **mail**. Revenues are of course readily identifiable with shape. **A** shape-based incremental cost test is thus straightforward and should be made routinely even if there exists **some** policy reason **for** allowing the costs of handling parcels to be cross-subsidized **by** letters and flats.

#### USPS/VP-T2-11.

Please refer **to** your testimony at page 51, lines 16-18. Please provide a citation to the record indicating where Dr. Bozzo "concurs" with the statement.

Response.

See witness Bozzo's responses to VP/USPS-T12-16(a), Tr. 1012677 (concurring with witness Bradley's statement quoted in my testimony at p. 51, ll. 6-14) and VP/USPS-T12-17, Tr. 1012679

**As** Dr. Rozzo states in response to the latter interrogatory:

the issue is whether the cost in question is avoidable if a product or service (in this case, First-class Mail) were not provided, and not the relative volume of other mail.

**Dr.** Bozzo does not mention "Periodicals letters," which my testimony uses as a specific example of the "other mail- mentioned by Dr. Bozzo.

### USPS/VP-T2-12.

Please refer to your testimony at page 51, line 23 to page 52, line 6. Please confirm that in the scenario you describe, the Standard letters require processing whether or not the First-class Mail service is provided. If you do not confirm, please explain.

Response.

Confirmed. All mail must be processed until it ultimately reaches its final destination. The situation with respect to small volumes of Standard letters that are sorted concurrently with First-class Mail is analogous to the Priority Mail situation described by witness Bradley, as quoted in niy testimony at page 51. lines 6-14. As witness Bradley observes, the 'other mail" that is processed with Priority Mail also would have to be processed if the Priority Mail cost pool did not exist. That is why all the volume variable cost of processing such other mail is attributed to that mail, and any non-volume variable costs of the Priority Mail cost pool are treated as intrinsic incremental costs of Priority Mail

#### USPS-VP-T2-13.

Please refer to your testimory, VP-T-2 at **24**, lines 8-10, where you claim that "[e]conomies of scale... refers to how cost changes after the organization has had full opportunity to make all requisite adjustments to a change in volume."

- a. Please confirm that the elasticity of scale measures how output varies as the "input bundle is multiplied by a scalar." See, e.g., Robert G. Chambers, Applied Production Analysis (Cambridge University Press, 1989) at 22. If you do not confirm, please explain.
- h. Please confirm that your definition is of long-run cost adjustments. i.e., "long run" costs reflect firms carrying out "all requisite adjustments," and not a definition of economies of scale. If you do not confirm, please reconcile your definition of 'economies of scale" with the definition of the elasticity of scale in the economic literature.

#### Response:

- a. Confirmed. Note. however. that "economies of scale" discussed in my testimony and 'elasticity of scale" referenced in this interrogatory are not the same thing: see Chambers. the reference which you cite, pages 72-73.
- h. Not confirmed Economies of scale reflect movement to the costminimizing point on higher level isoquants, not movement along a scalar to higher level isoquants. **As** Chambers points out (p. 72):

Many discussions use the terminology of "increasing (decreasing) returns to scale" and "returns to size" interchangeably. However, they are not the same thing even though the most convenient measures of these phenomena coincide at cost-minimizing points ... the elasticity of scale measures how output responds as one moves out along a scale line from the origin in input space. The elasticity of size measures the cost response

associated with movements along the locus of costminimizing points in input space, that is, the *expansion parh*. By necessity, therefore, the two measures are generally based on different input combinations. (Emphasis **io** original.)

It is the *expansion path* that reflects all requisite adjustments, not movement along a scalar line from the origin. Economies of scale and elasticity of scale will correspond only when subsequent cost minimizing points are on the scalar line, and this will be the case only when the production function, f(x), is homothetic. For further discussion on this point, see Chambers. pages 72-73; *for a* definition **of** homotheticity, see Chambers, pages 37-40.

#### USPSIVP-T2-14.

Please refer to your response to USPS/VP-T2-1b.

- a. Please confirm that a result of the "dual" economic theory of production and cost is that the cost elasticity in UPSS/VP-T2-1b [sic] (sometimes called the "elasticity of size") and the elasticity of scale are "closely related," specifically, the fotmer is the inverse of the latter. See, e.g., Robert G. Chambers, Applied Production Analysis (Cambridge University Press, 1989) at 71. If you do not confirm, please explain fully.
- b. Given your answer to pan (a), please explain the theoretical basis for your statement that 'Consequently, any empirical study of labor demand based on this model is not likely to develop any insight as to whether larger plants are subject to economies or diseconomies of scale." In particular, please explain why inferences on cost elasticities are "not likely to develop any insight" on quantities such as scale elasticities to which they are theoretically related.

#### Resnonse:

- a. Confirmed
- b. The "dual" economic theory of production and cost slates that when sufficient information on the cost of inputs is available, the cost function can be used to resurrect all the economically relevant information about the technology, or production function, of a firm that produces product X (where X could be 3 vector of outputs, such as an oil refinery that produces gasoline. kerosene. heating oil, etc.) typically in a single facility.

In order to study economies of scale, however, one needs to define more than a single production function. What is required is to determine the production function

for plants of different sizes, and then ascertain whether the *elasticity & scale* (E) is less than, equal to, **or** greater than one over the range of plant sizes studied (see Chambers, p. 22, equation 1.7, for a **formal** definition of the elasticity of scale). As **Chambers** notes (p. 23), E is interpretable as measuring how accurately the distance between isoquants in input space reflect the distance in output space. In order to discuss the distance between isoquants in either input or output space, one first needs to estimate two, three or more isoquants over the relevant range (e.g., for small, medium, and large size plants).

Thus, in order to study economies of scale, one needs a model that, at a minimum, seeks to and is capable of distinguishing between plants of different sizes. A model that aggregates MODS cost pools across all plants, from smallest to largest, and does not contain explicit variables for facility size is not geared to provide insight to economies of scale. Consequently, until witness Bozm either disaggregates and analyzes his data according to plant size, or introduces explicit variables for plant size, inferences on cost elasticities developed by witness Bozm are not likely to provide insight on quantities such as scale elasticities.

#### USPS/VP-T2-15.

Please refer to your response to USPS/VP-T2-2.

- a. You indicate that you are not familiar with the paper Dr. Bozzo cites in relationship to the distinction between economies of "density" and economies of "scale." Please describe your familiarity with any economic literature related to the Caves, Christensen, and Tretheway paper pertaining to measurement of "density" and "scale" elasticities.
- b. If your response to part (a) indicates that you are not familiar with the related economic literature, what is the basis for your discussion of "density" and "scale" economies in VP-T-2 at pages 17-31?

#### Response:

- a. Prior to reading **Dr. Bozzo's** response to VP/USPS-T12-4, Tr. 1012656, I was not familiar with the term economies of "density," or the literature dealing with airline economics which appears to be the subject of the Caves, Christensen, and Tretheway paper he cites.
- h. The basis for my discussion which you cite is what I would describe as a common sense interpretation of the term economies of "density" within the context in which it is invoked by Dr. Bozzo. His responses to VP/USPS-T12-4 and 6 state explicitly that neither the costs nor the magnitude of the costs that he considers fixed are related to the size or scale of the facility i.e., they do not reflect economies of scale yet implied savings (i.e., "economies") are to be had from spreading his non-volume variable costs over larger volumes. These implied savings, or economies of "density," are alleged to arise within the size

parameters of all existing postal facilities with MODS cost pools included in Dr. Bozzo's study, and do not require (i) growth or expansion in the size or capacity of any existing facility, or (ii) concentration of mail processing from smaller facilities into larger facilities with greater capacity. in order for such economies of "density" to be realized.

### USPSIVP-T2-16.

Please refer **to** your response to USPS/VP-T2-4(c), where you confirm that the long-run average cost curve is the "lower envelope" of the short-run average cost curves. Please confirm that this implies that long-run average cost does not exceed short-run cost. If you do **not** confirm. please explain.

### Response:

Confirmed

#### USPS/VP-T2-17.

Please refer to your response to USPS/VP-T2-5(b).

- a. Is it your understanding that the Postal Service accepts substantial volumes of non-machinable letters, flats, and parcels? Please explain any negative response.
- b. Please confirm that the data you provide cannot distinguish the use of manual operations to handle non-machinable pieces and automation rejects from other possible uses of manual operations. If you do not confirm. please explain fully.

#### **Rrsnonse:**

a. It is my understanding that the Postal Service accepts all mail properly tendered to it, provided the applicable postage and fees have been paid. It also is my understanding that mail which is accepted consists of letters. flats. and parcels, some of which are non-machinable. Non-machinable Standard mail pays a higher rate than machinable mail of the same shape and weight. Within First-Class, some non-machinable mail pays a non-machinable surcharge (e.g., square letters, or 1 ounce flats), bur I am aware that some of this mail nevertheless may be processed on the Postal Service's existing sortation equipment even though postage paid for such pieces is at thr non-machinable rate. I have not seen, nor am I aware of, any data which break out the volume of non-machinable niail, either in toto, or by shape. Further, even if such data were made available to me. I would not know what threshold the volume would

have to exceed in order to meet the threshold which you would classify as "substantial."

b. Confirmed. The Postal Service's manual cost pool data cited in my response to USPS/VP-T2-5(b) do not identify the various reasons why various letters, flars and parcels are processed manually

#### USPS/VP-T2-18.

Please refer to your response to USPS/VP-T2-7. Since your response redefines the "unit" to a larger quantity of mail. is your response appropriately summarized as confirming that "a larger increment of volume [would] normally be required."

#### Response:

USPS/VP-T2-7 did not define the term "single-unit" or specify whether the term was an unusual way of simply saying a "single piece" of mail. Such phraseology is entirely new to me. (Are we henceforth to refer to the annual volume of single-piece First-class Mail as X million "units" instead of as X million "pieces"?) It was not my intent to "redefine" what I consider to be an ambiguous term. For clarity, I will repeat here what now appears to be the more salient part of my answer:

If by single-unit you intend a single piece of mail, my answer is: No, in general I would not expect just one additional piece of Standard Mail to be sufficient to cause a facility to cease merging the processing.

If you now are defining 'unit" to mean unambiguously a single 'piece' of mail (as opposed to some agglomeration of pieces), then the remainder of my previous answer would need to be amended to read as follows:

If we assume that some volume of Standard Mail already exists and is being merged with First-class Mail, (i) for flats I would say that the chances are at least 1 in 3,000 that one additional "piece" might be sufficient, and (ii) for letters I would say that the chances are better than 1 in 6,000 that an additional "piece" would be sufficient to cause a facility to cease merging the processing and sort the Standard Mail separately.

With definition of the term 'unit" clarified, and my response thus clarified to correspond with the definition which you apparently intended, I agree that your above-proposed summary could be described either as reasonable or appropriate. For further discussion concerning changes associated with a single piece of mail and changes associated with volumes larger than a single piece of mail, see my response to USPS/VP-T2-19.

#### USPS/VP-T2-19.

Please refer to your response to USPS/VP-T2-8. What is your understanding **of** the treatment of inframarginal costs in the Postal Service's incremental cost model?

#### Resnonse:

My understanding **of** the treatment of inframarginal costs in the Postal Service's incremental cost model derives from the discussion of incremental costs in USPS-LR-L-I. Appendix I, the testimony of witness Pifer, USPS-T-18, in this docket, and the testimony of Prof. Baumol in Docket No. R87-1, USPS-T-3.

In theory, the incremental costs of a postal product or service consists of (i) the marginal cost of providing the product or service. and (ii) all other costs that would cease to exist if the product or service ceased **to** exist (all of these "other costs" being the inframarginal costs in the Postal Service's cost model). Confusion can arise, however, when the term marginal cost is not always used in a uniform manner.

For instance, the marginal cost of a product is usually thought **of**, or "defined," as the change in cost that occurs when the volume of mail changes by a single piece. This is **as** close **as one** can get to the infinitesimally small change envisioned in differential calculus. Some **postal** costs **may** be able to change by increments that can he considered equivalent to infinitesimally small; *e.g.*, time worked by an individual clerks can vary by seconds and minutes. Thus, as the volume of mail handled by a facility changes, the time worked by clerks may increase or decrease in a continuous manner — *i.e.*, by seconds, minutes, hours, etc.

Not all postal costs vary in such small increments; however. As volume changes, other costs will change in a "non-continuous" manner. As one example, in response to a volume-driven change in number of hours worked by clerks and mailhandlers, at some point size of the supervisory staff will increase or decrease by one supervisor. In comparison to the cost of handling a single piece of mail, the costs incurred or saved, respectively, from increasing or decreasing the supervisory staff by a single person would be a discontinuous change in cost. In an organization as large as the Postal Service, however, the change in costs by having one more or one less supervisor may seem like an almost continuous change. Any small discontinuity problem is handled conveniently and reasonably by including costs of immediate supervision among costs that are volume variable and treated as continuous.

As another example. when mail is being sorted at a facility and the volume of Standard mail is not large. it may be merged with First-Class Mail. Increasing or decreasing the volume of Standard mail by one piece is unlikely to change whatever operating procedure is in effect: see my response to USPS/VP-T2-18. With a larger increase (decrease) in volume, however. at some point the facility may incur (eliminate) the costs of 3 separate sort scheme for Standard mail. In comparison to the change in costs when volume changes by only one piece of mail, the costs incurred by adding or eliminating a single sort scheme would be a discontinuous change in cost.

Again, in an organization as large as the Postal Service, the change in total costs from having one more or one less sort scheme may seem like an almost continuous change.

So long as sort scheme costs are treated as volume variable, the discontinuous nature of such costs can be ignored and the costs treated as continuous. If all sort scheme costs are to be treated as fixed costs, however, then to paraphrase your quotation from Prof. Baumol in USPS/VP-T2-8, many of these fixed sort scheme costs would be eliminated if a particular service such as First-Class Mail were (hypothetically) discontinued and they should be included in the "incremental cost" of that service. This is why many of the sort scheme costs, if they are to he treated as non-volume variable, also should be treated as fixed intrinsic costs and attributed to the appropriate class of mail.

The point of the discussion in my response to USPS/VP-T2-8 was that some of these fixed costs that are properly included in incremental costs (such as fixed intrinsic scheme costs) will be eliminated by reductions in volume that fall far short of (hypothetical) elimination of the service, and those costs that would be eliminated by a pertinent change in volume (i) can be considered avoidable costs, and (ii) have a role to play in decision making. For example, it would be reasonable to include any such avoidable costs in the computation of workshare discounts.

It is neither reasonable nor a good precedent to treat a discontinuous, fixed incremental cost as though it were volume variable. A nomenclature problem then can arise when a rate-induced volume change is described as a "marginal" change in volume. and the resulting change in costs is described as the "marginal cost" of the "marginal" change in volume. From a practical operating perspective, a rate-induced volume change describes the situation of concern to Postal Service managers and

Commission decision makers. Neither is concerned with a marginal change in volume that consists of only one piece of mail. Under a situation such as this, where the change in volume obviously is far greater than a single piece of mail, it probably could be described better, or more accurately, as an *incremental* change in volume, with all references to a marginal change in volume restricted to the most infinitesimal change possible -i.e., a single piece of mail. All references to marginal cost and marginal volume then would be consistent.

The change in cost from such an incremental change in volume **properly** includes all changes in costs caused by the volume change (that is, marginal **cost** plus **any fixed** costs). and these may well include some of the discontinuous, inframarginal — *i.e.*, fixed *incremental* — costs discussed above. Note that when such fixed costs are part of the incremental cost associated with a rate-induced volume change, the average incremental cost associated with **a** volume change will not equal the marginal cost when "marginal cost" **is** defined as the change in cost resulting from a single piece of mail. In other words, when the Postal Service has costs which are fixed at the margin of **a** single piece of mail, but some of which vary with infra marginal changes in volume — *i.e.*, they are "semi-fixed" or "semi-variable" costs discussed in my response to USPS/VP-T2-8 — references to "marginal costs" need to be unambiguous. Attempting to have it both ways. where "marginal cost" refers to (i) the change in cost that occurs when the volume of niail changes by a single piece, **AND** (ii) average incremental cost over some larger **but** finite change in volume, **is** likely to create unnecessary confusion.

### USPS/VP-T2-20.

Please refer to your response to USPS/VP-T2-12, where you draw an analogy between the treatment of the Priority Mail cost pool and your scenario in which First-class Mail and Standard Mail are processed together at a facility whose volume is insufficient to justify running a separate Standard Mail scheme.

- a. Please confirm that, in the treatment of Priority Mail operations, it is assumed that parallel non-Priority Mail operations pre-exist to handle non-Priority Mail pieces in the Priority Mail operations. If you do not confirm, please explain.
- b. Do you agree that if the parallel non-Priority Mail operations did not already exist and would need to be set up in the absence of the Priority Mail product. then the setup costs would be, at least in part, non-avoidable? If not, please explain.
- C. Please confirm that in **your** scenario referenced in USPS/VP-T12-12, there is by assumption no pre-existing Standard Mail scheme. If you do not confirm, please explain.
- d. If. in this scenario, a Standard Mail scheme would need to be added in the absence of First-class Mail. how are the setup costs avoidable?

#### Response:

a. Treatment of the cost of Priority Mail operations is described in the testimony of witness Michael D. Bradley, USPS-T-22, in Docket No. R2000-1, and I am not aware that Dr. Bradley stated explicitly his assumptions about the existence or non-existence of other operations (at that time a significant volume of Priority Mail then was processed in dedicated facilities, known as PMPCs). In the absence of an explicit statement concerning his assumptions, I am unable to divine what implicit assumptions Dr. Bradley did or did not make concerning the pre-existence of parallel non-Priority Mail operations. If 'parallel non-

Priority Mail operations pre-exist to handle non-Priority Mail pieces in the Priority Mail operations," as your question presupposes, it is not clear why those non-Priority Mail pieces were not sent to the pre-existing non-Priority Mail operations for processing (instead of being processed in the Priority Mail operation)

- b. If parallel nor.-Priority Mail operations did not exist within a facility with a Priority Mail operation, that would be a reasonable explanation for why ncn-Priority Mail pieces would be processed in the Priority Mail operation (see my response to part a). In the absence of both (i) parallel non-Priority Mail operations and (ii) Priority Mail product, then in order to process some (incidental) volume of non-Priority Mail pieces (that otherwise might be processed in a Priority Mail operation if there were one), the Postal Service presumably would need either to incur some setup costs or else take the (incidental) volume of non-Priority Mail pieces to another (nearby) facility for processing. To the extent that the Postal Service elects to process such "incidental" volumes in a facility with no Priority Mail product and no parallel non-Priority Mail operation, then I would agree that setup costs would be, at least in part, non-avoidable.
- c. Confirmed. In the scenario where small volumes of Standard letters are sorted concurrently with First-class Mail (which must be sorted on a

preferential basis), the Postal Service is assumed to have opted for the concurrent sorting procedure because it is less costly, as well as, perhaps, equally expeditious for the First-class Mail and more expeditious for the Standard mail.

d. If a separate Standard mail scheme needed to be added -i.e., must be added - due either to the absence of First-class Mail or an abundance of Standard mail, then by definition the setup costs of the separate scheme could not be avoided

#### USPS/VP-T2-21.

Please refer to your testimony, VP-T-2. at **54**, lines 15-18, where you state that there is "no need to study how to treat non-volume variable mail processing costs" as long as the Commission treats mail processing costs as 100 percent volume-variable. Does this statement imply that the cast attribution issues you raise are moot, at least for the most part. if 100 percent volume-variability factors are applied? **If** not, please explain.

### Response:

Yes. If mail processing costs continue to be treated as 100 percent volume variable, then non-volume variable mail processing costs will not exist and the appropriate treatment of (hypothetical) non-volume variable costs ceases to be an issue.

#### USPS/VP-T2-22.

Please refer to your response to USPS/VP-T2-10. Consider a mail processing operation where the schemes are not normally specific to a single class or subclass of mail, e.g., letter **DPS** operations. Assume the operation has some non-variable cost. Please confirm that:

- a. There is no individual mail class or subclass whose elimination will lead to the elimination **of** such an operation.
- b. The non-variable cost of the operation is not causally 'attributable" to any individual class or subclass of mail as either volume-variable or incremental cost.

If you do not confirm either statement, please explain fully

### Resoonse:

a.-h. Confirmed: see my testimony starting at page 53, line 16 to page 54, line

4.

#### USPS/VP-T2-23.

Please refer to your testimeny at page **44.** Consider a son scheme in which First-class Mail is processed separate from Standard Mail.

- a. Please confirm that the First-class Mail will, in general, include both single piece First-class Mail and presorted First-class Mail. That is, please confirm that rate categories within First-class Mail are routinely merged. If you do not confirm, please explain.
- b. Please confirm that hypothetically eliminating all single piece First-class Mail volume will not eliminate the First-class Mail service.
- c. Please confirin that hypothetically eliminating all presorted First-class Mail volume will not eliminate the First-class Mail service.
- d. Please confirm that hypothetically eliminating single piece (or presorted)
  First-class Mail will not eliminate the First-class Mail scheme,
  assuming the Postal Service still seeks to separate First-class and
  Standard Mail processing. If you do not confirm, please explain.
- e. In general, where subclasses and/or rate categories within a class of mail are merged for processing. explain whether hypothetically eliminating a rate category will lead to the elimination of the class-specific processing.

#### Response:

- a. I cannot confirm whai the Postal Service does with respect to its internal operations. However, assuming that the presorted First-class Mail requires processing on the same son scheme as single-piece First-class Mail (e.g., incoming primary). I would expect the two to be merged rouiinely
- **b.** Confirmed.
- c. Confirmed
- d. Confirmed.

## Response of Valpak Witness Haldi to Interrogatory of United States Postal Service

e. Where class-specific processing exists (e.g., for letters, in sort schemes prior to DPSing), it is my understanding that separate processing is a result of the different service standards applicable to First-class and Standard mail. It also is my understanding that those service standards apply uniformly to all rate categories within each class of mail. In general, therefore, eliminating a single rate category from a class of mail would not be expected to eliminate class-specific processing for the remaining rate categories.

1		CHAIRMAN OMAS: This now brings us to oral
2	cross-exa	minaticn.
3		One participant has requested oral cross-
4	examinati	on, the United States Postal Service. Mr.
5	Heselton?	
6		CROSS-EXAMINATION
7		BY MR. HESELTON:
8	Q	Good afternoon, Dr. Haldi.
9	Α	Good afternoon. Mr. Heselton.
10	Q	Let's begin by turning to your response to
L1	Postal Se	ervice Interrogatory 1(b).
L2	Α	Yes, I have it.
13	Q	Dr. Haldi, is it a fair summary of the
14	mathemati	cs that you confirm there to be correct that
15	they show	that it is possible to measure a labor cost
16	elasticit	y with a labor demand elasticity?
17	Α	That's what the mathematic shows.
18	Q	Okay. Would you agree that volume variable
19	costs are	e defined such that cost elasticities, and I'm
20	talking h	ere cost elasticities generally whether or
21	not we ag	ree on the specific elasticities involved or
22	the detai	ls, the assumptions, the measurement measures
23	and so on	1.
24		Would you agree that volume variable costs
25	are defin	ed such that cost elasticities are inputs to

1	the volume variable cost calculations?
2	A Can you say that again a little slower?
3	Q Okay. Would you agree that volume variable
4	costs are defined such that cost elasticities are
5	inputs to the volume variable cost calculations?
6	A Yes, they can be.
7	Q So regardless of whether an analysis that
8	measures cost elasticities also measures economies of
9	scale as you describe then, would you agree that
10	measuring cost elasticities is an appropriate aim of
11	an analysis of volume variable cost?
12	A Yes, I think that you can subject to
1.3	realization that you're talking about a cost function
1 4	so long as the cost function is considered to be
1 5	differentiable, which means that there's a continuity.
16	If you're talking about when you're
17	measuring nonvolume variable costs, you're trying to
18	measure discontinuities of the cost function.
1 9	Q Let's turn to your response to Interrogatory
20	13(b).
2 1	A Yes, I'm there.
22	Q Okay. There I'd like you to consider the
23	excerpt from the Chambers book that you include in
24	your response.

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25

My first question regarding that is is it

1	your	understanding	that	the	"convenient	measures"
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- 2 Chambers is referring to are the elasticities of scale
- 3 and elasticities of size?
- A Excuse me. What's the question again?
- Okay. We're looking at the excerpt from the
- 6 Chambers book that you have in your response there,
- 7 and I'm focusing on the phrase in that excerpt
- 8 "convenient measures."
- 9 A Okay. I see it now.
- 10 0 It's contained on the fourth line of the
- ll excerpt.
- 12 A Yes.
- 13 Q My question there is is it your
- 14 understanding that the convenient measures Chambers is
- referring to are the elasticities of scale and
- 16 elasticities of size?
- 17 A That's my understanding of what he's
- 18 referring to there, yes.
- 19 Q Okay. And is it correct that the elasticity
- of size is the inverse of the cost elasticity with
- 21 respect to output?
- 22 A I believe that's what he says in there, yes.
- 23 Q Okay. So it would be correct to say then
- that while Chambers notes conceptual differences
- between the concepts of scale and size economies,

1	measures of them will coincide under certain
2	conditions?
3	A Under very limited conditions, yes, which he
4	spells out.
5	Q Well, if we turn back to your response to
6	Postal Service Interrogatory 1 where you say that "any
7	empirical study of labor demand based on a cost
8	function is not likely to develop any insight as to
9	whether larger plants are subject to economies or
LO	diseconomies of scale, "that isn't really true, is it?
L1	A I believe it to be true. I haven't
12	developed any insights from reading Dr. Bozzo's
13	testimony that indicate to me that there's any
14	economies or disecononies of scale. I don't get any
15	insight either way.
16	Q Well, according to the passage you quote
L 7	from Chambers, aren't there at least some conditions
L 8	under which you can directly infer the existence of
L9	economies of scale from the cost or the labor demand
20	elasticities?
21	A There are some conditions, but they're very
22	restrictive, and to do it empirically is a monumental
23	task. You're going from theory to practice here.
24	Q Nevertheless, you agree that some conditions
25	do exist?

1	A In theory, correct.
2	Q Now, in your response to Interrogatory 13 in
3	the paragraph on the second page of that interrogatory
4	following the excerpted passage do you see the
5	sentence beginning, "Economies of scale and the
6	elasticity of scale will correspond"?
7	A Right.
8	Q Do you mean economies of scale and economies
9	of size?
10	A No. Economies of scale means economies of
11	scale. There's a fairly close relationship between
12	economies of scale and economies of size, but they're
13	not identical.
14	Q Well, how about correspondence between the
15	elasticity of scale and the elasticity of size
16	instead?
17	A Okay. The discussion here is in terms of
18	both mathematics and also geometry here. When we talk
19	about a scalar line that's a geometrical reference.
20	There's a similarity between them, yes, and
21	he points out I think Chambers points out that
22	there's a close similarity, but they're not identical.
23	Q But he <i>does</i> indicate the case where they
24	are?
25	A Yes, and he also has a long explanation
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1	about how difficult it is to implement the theory.
2	Q Please turn to your response to Postal
3	Service Interrogatory 14(b).
4	A Okay. That's the one with the missing
5	Epsilon.
6	Q That instance doesn't impact, though, I
7	think what we'd like to talk about here.
8	I'm looking here at the last paragraph in
9	that response where you say, "A model that aggregates
10	MODS cost pools across all plantsand does not
11	contain explicit variables for facility size is not
12	geared to provide insight to economies of scale."
13	A That's correct.
14	Q When you say "a incdel that aggregates" are
1 5	you implying that observations from various sized
16	plants are being combined to defer aggregated
17	observations, or is there some other meaning of
18	aggregate that you have in mind?
19	A There's different ways to take the data that
0.0	

19 A There's different ways to take the data that
20 Dr. Bozzo worked with. One would be to partition the
21 data into plants of different sizes, or you could do a
22 regression type analysis as he did, but you would then
23 need to include some kind of a variable that's
24 explicit as to plant size to allow for variations in
25 size, but I didn't see that variable in there.

1	I would prefer, frankly, to disaggregate the
2	data and do some sort of analysis on pools of data by
3	plant size, but you could also do it his way. I think
4	looking at the data for individual plants by size
5	grouping would be a more straightforward way to do it.
6	Q Would you consider measures of a facility's
7	capital stock or capital input to be a variable for
8	facility size?
9	A It could be used as a proxy, yes.
10	Q And would you consider measures of size of a
11	facility service territory to be measures of facility
12	size?
13	A Not necessarily, no.
14	Q Don't large plants tend to serve larger
15	populations?
16	$\mathbf{A}$ Wait. Do you define it by population or by
17	geography?
18	Q Service territory, but I think one could say
19	that there's a correspondence generally between the
20	size of service territory and the number of people in
21	that.
22	A I think one service territory is where I
23	live, Manhattan. Another service territory is the
24	State of Montana. Montana is bigger than Manhattan,

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but I think we have more people in Manhattan,

- 1 Q Given what you say is true there, if you
- 2 looked at measures of service territory in terms of
- 3 not geographic size, but in terms of the number of
- 4 deliveries and measures like that --
- 5 A Yes.
- 6 Q -- would you expect there that large plants
- 7 would tend to serve more customers?
- 8 A I would, yes.
- 9 Q If you would please turn to your response to
- 10 Interrogatory 15?
- 11 A All right.
- 12 O And here I'm looking at 15(b) at the
- beginning of your response there when you say that the
- basis for your discussion relies on a common sense
- interpretation.
- 16 Are you saying that you did not evaluate the
- technical points of the referenced economic
- 18 literature?
- 19 A I didn't have available to me at the time
- the article that Dr. Bozzo cited.
- 21 Q And so that is a basis of your discussion?
- You're basically relying on a common sense
- 23 interpretation?
- A What I consider to be, yes.
- 25 MR. HESELTON: Thank you, Dr. Haldi.

1	Mr. Chairman, that completes the Postal
2	Service's cross-examination of this witness.
3	CHAIRMAN OMAS: Thank you, Mr. Heselton.
4	Are there any other questions from anyone
5	who wishes to cress-examine Witness Haldi?
6	(No response.)
7	CHAIRMAN OMAS: Are there any questions from
8	the bench?
9	(No response.)
10	CHAIRMAN OMAS: Mr. Olson, would you like
11	some time with your witness?
12	MR. OLSON: One minute, please.
13	CHAIRMAN OMAS: Yes.
14	(Whereupon, a short recess was taken.)
15	MR. OLSON: Mr. Chairman, we have no
16	redirect. Thank you.
17	CHAIRMAN OMAS: Thank you, Mr. Olson.
18	Thank you, Mr. Haldi. We appreciate your
19	appearance here and your testimony today, and we
20	appreciate your contribution to the record. You are
21	now excused.
22	THE WITNESS: Thank you, Mr. Chairman.
23	(Witness excused.)
24	CHAIRMAN OMAS: I thank everyone. It's
25	concluded a lot earlier than I had anticipated.

```
Mr. Heselton, thank you for your job today.
1
      I mean, having three witnesses all in one day must
 2
      have been rough, but you did an excellent job.
3
                 Everybody did a good job, and I want to
 5
      thank you all and thank Mr. Roberts and everyone and
      Mr. McKeever and Mr. Neels. Everybody did a wonderful
 6
 7
      job today. I hope I didn't forget anyone.
                 That concludes today's hearing.
 8
                                                  We will
 9
      reconvene Monday morning at 9:30 when we will receive
10
      testimony from witnesses Pritchard, Pursley, Posch,
      Horowitz, Ingranam and Kelejian.
11
12
                 Thank you very much. You all enjoy the
13
      weekend, and we'll see you Monday morning. Thank you.
                 (Whereupon, at 1:53 p.m. the hearing in the
14
15
      above-entitled matter was adjourned, to reconvene at
16
      9:30 a.m. on Monday, October 30, 2006.)
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## REPORTER'S CERTIFICATE

DOCKET NO.: \$2006-1

CASE TITLE: Postal Rate and Fre Changes

HEARING DATE: 10/27/06

LOCATION: Washington, D.C.

I hereby certify that the proceedings and evidence are contained fully and accurately on the tapes and notes reported by me at the hearing in the above case before the Postal Rate Commission.

Date: 10/27/06

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